State of Ohio Environmental Protection Agency

Street Address:
Lazarus Gov. Center
122 S. Front Street
Columbus, OH 43215

TELE: (614) 644-3020 **FAX:** (614) 644-2329

Mailing Address:
Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

10/06/03

CERTIFIED MAIL

RE: Draft Title V Chapter 3745-77 permit

03-20-01-0001
GMC Powertrain Div.
Dennis Veith
26427 State Route 281 East
Defiance, OH 43512-0070

Dear Dennis Veith:

You are hereby notified that the Ohio Environmental Protection Agency has prepared the enclosed draft of the Title V permit for the facility referenced above. The purpose of this draft is to solicit public comments. A public notice concerning the draft will appear in the Ohio EPA Weekly Review and the major newspaper in the county where the facility is located. Comments and/or a request for a public hearing from the public and any affected parties will be accepted by Northwest District Office within 30 days of the date of publication in the newspaper. You will be notified in writing if a public hearing is scheduled. **In order to facilitate our review of all the comments or concerns you may have with the enclosed draft permit, please provide a hand marked-up copy of the draft permit showing the changes you think are necessary, along with any additional summary comments, by the end of the draft public comment period. The hard marked-up copy and any additional summary comments should be submitted to the Ohio EPA District Office or local air agency identified below and to this office at the following address:**

Ohio EPA, Division of Air Pollution Control
Permit Issuance and Data Management Section
Draft Title V Permit Correspondence
122 South Front Street
Columbus, Ohio 43215

A decision on processing the Title V permit will be made after consideration of written public comments and oral testimony (if a public hearing is conducted). After the comment period, you will be provided with a Preliminary Proposed Title V permit and an opportunity to comment prior to the Proposed Title V permit submittal to USEPA.

If you have any questions concerning this draft Title V permit, please contact Northwest District Office.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

cc: USEPA (electronically submitted)
File, DAPC PMU
Northwest District Office
Indiana
Michigan

State of Ohio Environmental Protection Agency

DRAFT TITLE V PERMIT

Issue Date: 10/06/03	Effective Date: To be entered upon final issuance	Expiration Date: To be entered upon final issuance

This document constitutes issuance of a Title V permit for Facility ID: 03-20-01-0001 to:

GMC Powertrain Div.
State Route 281 East
Defiance, OH 43512

Emissions Unit ID (Company ID)/Emissions Unit Activity Description

B002 (Boiler # 2)
Boiler # 2 - Powerhouse

F001 (Roadways & Parking)
Roadways and Parking Lots (Paved and Unpaved Roads)

F003 (LANDFILL MOD)
Foundry Landfill - Residual & Exempt On-site Waste Disposal

F004 (Reclaimer - Exempt)
Metals Separation and Exempt Waste Storage Piles

F005 (Reclaimer-Nonexempt)
Meagnetic Metal Separation, Screening, Conveyor and Truck Loading - Core Waste Crushing, Screening, and Truck Loading Operations

P003 (ML6 Mold Facilities)
ML6 (Plant 2W) - Mold Facilities

P004 (ML6 MOLD S/O & CC)
ML6 (Plant 2W) - Mold Shakeout and Casting Cooling

P006 (ML7 SORT AREA)
ML7 (Plant 2W) - Casting Sort Area

P007 (ML7 MOLD FACILITIES)
ML7 (Plant 2W) - Mold Facilities

P008 (ML7 MOLD COOLING)
ML7 (Plant 2W) - Mold Cooling

P010 (ML6 MOLD COOLING)
ML6 (Plant 2W) - Mold Cooling

P011 (ML7 IRON POUR)
ML7 (Plant 2W) - RMIP & Rod Furnace

P012 (ML6 IRON POUR)
ML6 (Plant 2W) - RMIP & Rod Furnace

P015 (ML7 SAND SYSTEM)
ML7 (Plant 2W) - Mold Sand Mix System

P019 (ML6 SAND SYSTEM)
ML6 (Plant 2W) - Mold Sand and Slurry Mix System

P020 (ML6 BLAST CABINET)
ML6 (Plant 2W) - Blast Cabinet

P024 (Cupola - #6E)
Cupola #6E (Plant 2W) - Cupola and Iron Troughs

P027 (6E & 6W SLAGGING)
Cupola #6E & #6W (Plant 2W) - Slag removal & quench

P088 (ML2 SAND SYSTEM)
ML2 (Plant 1) - Mold Sand Mix System

P089 (ML2 S/O & CC)
ML2 (Plant 1) - Mold Shakeout and Casting Cooling

P090 (ML2 MOLD COOLING)
ML2 (Plant 1) - Mold Cooling

P095 (ML2 MOLD FACILITIES)
ML2 (Plant 1) - Molding Facilities

P098 (FN4 BLAST CABINET #5)
FN4 (Plant 1) - No. 5 Blast cabinet

P122 (CR6 OVEN - CORE DRY)
CR6 (Plant 1) - Core Proc & Dry Oven H.B.

P127 (FN4 GRINDER NE 5 B/C)
FN4 (Plant 1) - Grinder NE of #5 B/C

P141 (ML3 MOLD FACILITIES)
ML3 (Plant 1) - Molding Facilities - This source was separated into P439 for 95 TV application.

P142 (ML3 MOLD COOLING)
ML3 (Plant 1) - Mold Cooling

P149 (ML3 SAND SYSTEM)
ML3 (Plant 1) - Mold Sand Mix System

P154 (ML3 SPRUE HANDLING)
ML3 (Plant 1) - Casting Separation, Shakeout & Sprue Handling

P161 (FN4 BLAST CABINET #6)
FN4 (Plant 1) - No. 6 Blast Cabinet

P164 (ML7 S/O & CC)
ML7 (Plant 2W) - Mold Shakeout and Casting Cooling

P165 (CUPOLA - #6W)
Cupola #6W (Plant 2W) - Cupola and Iron Troughs

P167 (CHARGE MAKE-UP -Plt2)
Cupola #6E & #6W (Plant 2W) - Charge Makeup

P168 (CHARGE MAKE-UP - #3)
Cupola #3 (Plant 1) - Charge Makeup

P173 (ML1 MOLD COOLING)
ML1 (Plant 1) - Mold Cooling

P174 (ML1 S/O & CC)
ML1 (Plant 1) - Mold Shakeout and Casting Cooling

P180 (ML1 SAND SYSTEM)
ML1 (Plant 1) - Mold Sand Mix System

P184 (HB CORE MACH #16-17)
CR6 (Plant 1) - Core Hot Box #16-17

P188 (CUPOLA - #4)
Cupola #4 (Plant 1) - Cupola and Iron Troughs

P189 (FURN - #4 AJAX)
Ajax #4 (Plant 1) - Electric Induction Furnace

P190 (FURN - #5 AJAX)
Ajax #5 (Plant 1) - Electric Induction Furnace

P196 (FN1 BLAST CABINET #3)
FN1 (Plant 1) - No. 3 Blast Cabinet

P197 (DESULFURIZATION - 6W)
Cupola #6W (Plant 2W) - Desulfurization Station

P202 (FN7 S/O HEAD DUMP)
FN7 (Plant 1) - Shaker/Head Dump

P203 (FN7 S/O HEAD SORT)
FN7 (Plant 1) - Shaker/Head Sort

P207 (SLURRY SYSTEM)
(Plant 1) - Mold Sand Slurry System

P208 (ML2 IRON POUR)
ML2 (Plant 1) - RMIP & Rod Furnace

P209 (CHARGE MAKE-UP - #4)
Cupola #4 (Plant 1) - Charge Makeup

P210 (DESULFURIZATION - 6E)
Cupola #6E (Plant 2W) - Desulfurization Station

P211 (CR3 OVEN - W HB34-35)
CR3 (Plant 1) - Core Curing Oven W of HB 34-35

P212 (HB CORE MACH #18-#19)
CR6 (Plant 1) - Core Hot Box #18-19

P213 (HB CORE MACH #20-#21)
CR6 (Plant 1) - Core Hot Box #20-21

P215 (FN6 GRINDER N 11 B/C)
FN6 (Plant 1) - Grinder N of #11 B/C

P216 (ML6 SORT AREA)
ML6 (Plant 2W) - Casting Sort Area

P223 (BLAST CABINET - LQA)
(Plant 1) - Blast Cabinet LQA W of ML2

P233 (CR6 OVEN - #1 CORE)
CR6 (Plant 1) - Core Drying Oven

P235 (FN4 SHAKER - N 5 B/C)
FN4 (Plant 1) - Shaker N of #5 B/C

P236 (FN1 GRINDER - E 3 BC)
FN1 (Plant 1) - Block Grinder E of #3 B/C

P237 (FN4 SHAKER - N 6 B/C)
FN4 (Plant 1) - Shaker N of #6 B/C

P248 (ML3 S/O & CC)
ML3 (Plant 1) - Mold Shakeout and Casting Cooling

P253 (FN5 BLAST CABINET #7)
FN5 (Plant 1) - No. 7 Blast Cabinet

P254 (FN5 SHAKER - N 7 B/C)
FN5 (Plant 1) - Shaker N of #7 B/C

P255 (FN5 GRINDER - N 7 BC)
FN5 (Plant 1) - Grinder N of #7 B/C

P256 (FN5 BLAST CABINET #8)
FN5 (Plant 1) - No. 8 Blast Cabinet

P257 (FN5 SHAKER - N 8 B/C)
FN5 (Plant 1) - Shaker N of #8 B/C

P264 (ML3 IRON POUR)
ML3 (Plant 1) - RMIP and Rod Furnace

P265 (FURN - #3 AJAX)
Ajax #3 (Plant 1) - Electric Induction Furnace

P269 (SLAGGING-ML7)
ML7 (Plant 2W) - Slag Removal Station

P271 (ML1 IRON POUR)
ML1 (Plant 1) - RMIP and Rod Furnace

P273 (ML1 MOLD FACILITIES)
ML1 (Plant 1) - Mold Facilites

P274 (SAND DEL SYS)
(Plant 1) - Core Sand Delivery System

P284 (BLAST CABINET - #3)
ML7 (Plant 2W) - No. 3 Blast Cabinet

P289 (FN6 BLAST CABINET 11)
FN6 (Plant 1) - No. 11 Blast Cabinet

P292 (HB CORE MACH #38-39)
CR3 - (Plant 1) - Core Hot Box #38-39

P297 (CR3 OVEN - #2 CORE)
CR3 (Plant 1) - Inline Core Drying Oven - S of P211

P298 (HB CORE MACH #47-48)
CR6 (Plant 1) - Core Hot Box #47-48

P299 (HB CORE MACH #49-50)
CR6 (Plant 1) - Core Hot Box #49-50

P300 (FN6 SHAKER N 11 B/C)
FN6 (Plant 1) - Shaker N of #11 B/C

P301 (FN6 SHAKER NE 11 B/C)
FN6 (Plant 1) - Shaker NE of #11 B/C

P302 (CR1 CB CORE MACH #60)
CR1 (Plant 1) - Core Cold Box #60

P311 (FN1 SHAKER S 3 B/C)
FN1 (Plant 1) - Shaker S of #3 B/C

P318 (CUPOLA - #3)
Cupola #3 (Plant 1) - Cupola and Iron Troughs

P320 (CR5 OVEN - #3 CORE)
CR5 (Plant 1) - Core Wash Dry Oven - @ CB 68, 69-70

P321 (CB CORE MACH #66-67)
CR5 (Plant 1) - Core Cold Box #66-67

P323 (HB CORE MACH #71-72)
CR8 (Plant 1) - Core Hot Box #71-72

P324 (HB CORE MACH #73-74)
CR8 (Plant 1) - Core Hot Box #73-74

P325 (HB CORE MACH #75-76)
CR8 (Plant 1) - Core Hot Box #75-76

P329 (CR8 OVEN DRY #1 FECO)
CR8 (Plant 1) - FECO Line #1 Core Dip Drying Oven

P330 (CR8 OVEN DRY #2 FECO)
CR8 (Plant 1) - FECO Line #2 Core Dip Drying Oven

P331 (CR8 OVEN DRY #3 FECO)
CR8 (Plant 1) - FECO Line #3 Core Dip Drying Oven

P332 (CR8 OVEN DRY #4 FECO)
CR8 (Plant 1) - FECO Line #4 Core Dip Drying Oven

P333 (CR8 V COOLER #1FECO)
CR8 (Plant 1) - FECO Line #1 Vertical Core Cooler

P334 (CR8 V COOLER #2FECO)
CR8 (Plant 1) - FECO Line #2 Vertical Core Cooler

P335 (CR8 V COOLER #3FECO)
CR8 (Plant 1) - FECO Line #3 Vertical Core Cooler

P336 (CR8 V COOLER #4FECO)
CR8 (Plant 1) - FECO Line #4 Vertical Core Cooler

P337 (CR8 OVEN PSTE 1 FECO)
CR8 (Plant 1) - FECO Line #1 Core Paste Drying Oven

P338 (CR8 OVEN PSTE 2 FECO)
CR8 (Plant 1) - FECO Line #2 Core Paste Drying Oven

P339 (CR8 OVEN PSTE 3 FECO)
CR8 (Plant 1) - FECO Line #3 Core Paste Drying Oven

P340 (CR8 OVEN PSTE 4 FECO)
CR8 (Plant 1) - FECO Line #4 Core Paste Drying Oven

P349 (FURN - 130 TON)
130 Ton Furnace (Plant 2W) - Electric Induction Furnace

P352 (CR11 OVEN - #4 CORE)
CR11 (Plant 1) - Core Dip Drying Oven (3.4 L bulk)

P353 (HB CORE MACH #77-78)
CR8 (Plant 1) - Core Hot Box #77-78

P354 (HB CORE MACH #79-80)
CR8 (Plant 1) - Core Hot Box #79-80

P355 (HB CORE MACH #81-82)
CR8 (Plant 1) - Core Hot Box #81-82

P356 (HB CORE MACH #83-84)
CR8 (Plant 1) - Core Hot Box #83-84

P358 (CB CORE MACH #69-70)
CR5 (Plant 1) - Core Cold Box #69-70

P360 (FN4 GRINDER V6 BLOCK)
FN4 (Plant 1) - Grinder V6 Blk NW of #5 B/C

P361 (CR11 OVEN - #5 CORE)
CR11 (Plant 1) - Shell Core Wash Oven - Shell Dip - "Toyota"

P363 (SAND DEL SYS #75)
(Plant 1) - Sand Del Sys Pneu#75

P364 (SAND DEL SYS #100)
(Plant 1) - Sand Del Sys Pneu#100

P365 (SAND DEL SYS #900A)
(Plant 1) - Sand Del Sys Pneu#900A

P366 (FN1 SHAKER N #3 B/C)
FN1 (Plant 1) - Shaker 6.2L N of #3 B/C

P367 (FN1 GRINDER 6.2L HD)
FN1 (Plant 1) - Grinder 6.2L Head SW of #3 B/C

P368 (FN1 GRINDER 4.3&5.0L)
FN1 (Plant 1) - Grinder 4.3L & 5.0L Hd Mid #3 B/C

P369 (CR5 CB CORE MACH #68)
CR5 (Plant 1) - Core Cold Box #68

P370 (CR3 CB CORE MACH #92)
CR3 (Plant 1) - Core Cold Box #92

P371 (CR3 CB CORE MACH #91)
CR3 (Plant 1) - Core Cold Box #91

P372 (CR8 CB CORE MACH #85)
CR8 (Plant 1) - Core Cold Box #85

P373 (CR8 CB CORE MACH #86)
CR8 (Plant 1) - Core Cold Box #86

P374 (CR8 CB CORE MACH #87)
CR8 (Plant 1) - Core Cold Box #87

P375 (CR8 CB CORE MACH #88)
CR8 (Plant 1) - Core Cold Box #88

P376 (CR8 OVEN PSTE #5FECO)
CR8 (Plant 1) - FECO Line #5 Core Paste Drying Oven

P377 (CR8 V COOLER #5FECO)
CR8 (Plant 1) - FECO Line #5 Vertical Core Cooler

P378 (CR8 CORE DRY #5 FECO)
CR8 (Plant 1) FECO Line #5 Core Dip Drying Oven

P379 (CR9 CB CORE MACH #89)
CR9 (Plant 1) - Core Cold Box #89

P380 (FN2 BLAST CABINET 12)
FN2 (Plant 1) - No. 12 Blast Cabinet

P381 (FN2 GRINDER HD 12 BC)
FN2 (Plant 1) - Gen III Head Grinder

P382 (FN2 SHAKER N 12 B/C)
FN2 (Plant 1) - Gen III Head Shaker

P383 (CR8 HB CORE MACH #96)
CR8 (Plant 1) - Core Hot Box #96

P384 (CR8 HB CORE MACH #97)
CR8 (Plant 1) - Core Hot Box #97

P385 (CR8 HB CORE MACH #98)
CR8 (Plant 1) - Core Hot Box #98

P386 (CR8 HB CORE MACH #99)
CR8 (Plant 1) - Core Hot Box #99

P387 (CB CORE MACH #93-95)
CR5 (Plant 1) - Core Cold Box #93, 94, 95

P388 (HB CORE MACH 100-101)
CR9 (Plant 1) - Core Hot Box #100-101

P390 (OVEN - #5 CORE)
CR9 (Plant 1) - Core Dip Drying Oven @ CB 89 & 90

P391 (SAND TRNSPRTR HB100)
(Plant 1) - Sand Transporter to HB 100-101

P392 (SAND TRNSPRTR HB102)
(Plant 1) - Sand Transporter to HB 102-103

P394 (CB CORE MACH 104-106)
CR4 (Plant 1) - Core Cold Box #104-106 (Loramendi Cell #4)

P395 (CB CORE MACH 107-109)
CR4 (Plant 1) Core Cold Box #107-109 (Loramendi Cell #5)

P396 (OVEN - CORE WASH 4&5)
CR4 (Plant 1) - Cell 4 & 5 Core Wash Oven

P397 (CB CORE MACH 110-112)
CR4 (Plant 1) - Core Cold Box #110-112 (Loramendi Cell #6)

P398 (CB CORE MACH 113-115)
CR4 (Plant 1) - Core Cold Box #113-115 (Loramendi Cell #7)

P399 (OVEN - CORE WASH 6&7)
CR4 (Plant 1) - Cell 6 & 7 Core Wash Oven

P401 (CR9 CB CORE MACH #90)
CR9 (Plant 1) - Core Cold Box #90

P402 (CR9 OVEN - #7 CORE)
CR9 (Plant 1) - Paste Cure Oven @ CB #89 & #90

P403 (CR3 CB CORE MACH 116)
CR3 (Plant 1) - Core Cold Box #116 (Loramendi Cell #8)

P404 (CR3 CB CORE MACH 117)
CR3 (Plant 1) - Core Cold Box #117 (Loramendi Cell #8)

P405 (CR3 CB CORE MACH 118)
CR3 (Plant 1) - Core Cold Box #118 (Loramendi Cell #8)

P406 (CR3 OVEN - #8 CORE)
CR3 (Plant 1) - Cell 8 Core Wash Oven

P407 (BEAD PRE-EXP CELL #1)
LF Cell #1 (Plant 2) - Bead Pre-expander

P408 (BEAD PRE-EXP CELL #2)
LF Cell #2 (Plant 2) - Bead Pre-expander

P409 (BEAD PRE-EXP CELL #3)
LF Cell #3 (Plant 2) - Bead Pre-expander

P410 (BEAD PRE-EXP CELL #4)
LF Cell #4 (Plant 2) - Bead Pre-expander

P411 (CASTLINE CELL #1)
LF Cell #1 (Plant 2) - Castline

P412 (CASTLINE CELL #2)
LF Cell #2 (Plant 2) - Castline

P413 (CASTLINE CELL #3)
LF Cell #3 (Plant 2) - Castline

P414 (CASTLINE CELL #4)
LF Cell #4 (Plant 2) - Castline

P415 (SAND SILO CELL #1)
LF Cell #1 (Plant 2) - Sand Silo

P416 (SAND SILO CELL #2)
LF Cell #2 (Plant 2) - Sand Silo

P417 (SAND SILO CELL #3)
LF Cell #3 (Plant 2) - Sand Silo

P418 (SAND SILO CELL #4)
LF Cell #4 (Plant 2) - Sand Silo

P419 (SAND RECLAIM FURN #1)
LF Cell #1 (Plant 2) - Sand Reclaim Furnace

P420 (SAND RECLAIM FURN #2)
LF Cell #2 (Plant 2) - Sand Reclaim Furnace

P421 (SAND RECLAIM FURN #3)
LF Cell #3 (Plant 2) - Sand Reclaim Furnace

P422 (SAND RECLAIM FURN #4)
LF Cell #4 (Plant 2) - Sand Reclaim Furnace

P423 (RECEIVING FURN #1)
(Plant 2) - Receiving Furnace #1

P424 (RECEIVING FURN #2)
(Plant 2) - Receiving Furnace #2

P426 (HOLDING FURN #1)
(Plant 2) - Holding Furnace #1

P427 (HOLDING FURN #2)
(Plant 2) - Holding Furnace #2

P430 (CR3 CB CORE MACH 119)
CR3 (Plant 1) - Core Cold Box #119

P434 (CB CORE MACH 120)
(Plant 1) - Core Cold Box #120

P435 (CB CORE MACH 121)
(Plant 1) - Core Cold Box #121

P436 (CB CORE MACH 122)
(Plant 1) - Core Cold Bbox #122

P437 (HB CORE MACH #123)
(Plant 1) - Core Hot Box #123

P438 (HB CORE MACH #124)
(Plant 1) - Core Hot Box #124

P439 (HB CORE MACH #10)
(Plant 1) - Core Hot Box #10

P440 (HB CORE MACH #34-35)
CR3 (Plant 1) - Core Hot Box #34-35

P441 (HB CORE MACH #36-37)
CR3 (Plant 1) - Core Hot Box #36-37

P442 (CR1 CB CORE MACH #55)
CR1 (Plant 1) - Core Cold Box #55

P443 (CR1 CB CORE MACH #56)
CR1 (Plant 1) - Core Cold Box #56

P444 (CR1 CB CORE MACH #57)
CR1 (Plant 1) - Core Cold Box #57

P445 (CR1 CB CORE MACH #58)
CR1 (Plant 1) - Core Cold Box #58

P446 (CR1 CB CORE MACH #59)
CR1 (Plant 1) - Core Cold Box #59

P447 (CR1 CB CORE MACH #61)
CR1 (Plant 1) - Core Cold Box #61

P448 (CR7 OVEN - #9 CORE)
CR7 (Plant 1) - Core Dip Drying Oven #2

P449 (CR3 OVEN - #10 CORE)
CR3 (Plant 1) - Core Dip Drying Oven (X5-3)

P450 (CR1 OVEN - #11 CORE)
CR1 (Plant 1) - Core Dip Drying Oven (X5-5)

P451 (CR1 OVEN - #12 CORE)
CR1 (Plant 1) - Core Dip Drying

P452 (CB CORE MACH #125)
(Plant 1) - Core Cold Box #125

P453 (CB CORE MACH #126)
(Plant 1) - Core Cold Box #126

You will be contacted approximately eighteen (18) months prior to the expiration date regarding the renewal of this permit. If you are not contacted, please contact the appropriate Ohio EPA District Office or local air agency listed below. This permit and the authorization to operate the air contaminant sources (emissions units) at this facility shall expire at midnight on the expiration date shown above. If a renewal permit is not issued prior to the expiration date, the permittee may continue to operate pursuant to OAC rule 3745-77-08(E) and in accordance with the terms of this permit beyond the expiration date, provided that a complete renewal

application is submitted no earlier than eighteen (18) months and no later than one-hundred eighty (180) days prior to the expiration date.

Described below is the current Ohio EPA District Office or local air agency that is responsible for processing and administering your Title V permit:

Northwest District Office
347 North Dunbridge Road
Bowling Green, OH 43402
(419) 352-8461

OHIO ENVIRONMENTAL PROTECTION AGENCY

_____

Christopher Jones
Director

PART I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Section

1. Monitoring and Related Record Keeping and Reporting Requirements

a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, i.e., in Section A.III of Part III of this Title V permit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

i. The date, place (as defined in the permit), and time of sampling or measurements.
ii. The date(s) analyses were performed.
iii. The company or entity that performed the analyses.
iv. The analytical techniques or methods used.
v. The results of such analyses.
vi. The operating conditions existing at the time of sampling or measurement.
(Authority for term: OAC rule 3745-77-07(A)(3)(b)(i))

b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
(Authority for term: OAC rule 3745-77-07(A)(3)(b)(ii))

c. The permittee shall submit required reports in the following manner:

i. **All reporting required in accordance with OAC rule 3745-77-07(A)(3)(c) for deviations caused by malfunctions shall be submitted in the following manner:**

Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be promptly reported to the Ohio EPA in accordance with OAC rule 3745-15-06. In addition, to fulfill the OAC rule 3745-77-07(A)(3)(c) deviation reporting requirements for malfunctions, written reports that identify each malfunction that occurred during each calendar quarter (including each malfunction reported only verbally in accordance with OAC rule 3745-15-06) shall be submitted by January 31, April 30, July 31, and October 31 of each year in accordance with General Term and Condition A.1.c.ii below; and each report shall cover the previous calendar quarter.

In accordance with OAC rule 3745-15-06, a malfunction constitutes a violation of an emission limitation (or control requirement) and, therefore, is a deviation of the federally enforceable permit requirements. Even though verbal notifications and written reports are required for malfunctions pursuant to OAC rule 3745-15-06, the written reports required pursuant to this term must be submitted quarterly to satisfy the prompt reporting provision of OAC rule 3745-77-07(A)(3)(c).

In identifying each deviation caused by a malfunction, the permittee shall specify the emission limitation(s) (or control requirement(s)) for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation. For a specific malfunction, if this information has been provided in a written report that was submitted in accordance with OAC rule 3745-15-06, the permittee may simply reference that written report to identify the deviation. Nevertheless, all malfunctions, including those reported only verbally in accordance with OAC rule 3745-15-06, must be reported in writing on a quarterly basis.

Any scheduled maintenance, as referenced in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation (or control requirement) shall be reported in the same manner as described above for malfunctions.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

ii. **Except as may otherwise be provided in the terms and conditions for a specific emissions unit, i.e., in Section A.IV of Part III of this Title V permit or, in some cases, in Part II of this Title V permit, all reporting required in accordance with OAC rule 3745-77-07(A)(3)(c) for deviations of the emission limitations, operational restrictions, and control device operating parameter limitations shall be submitted in the following manner:**

Written reports of (a) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures taken, shall be promptly made to the appropriate Ohio EPA District Office or local air agency. Except as provided below, the written reports shall be submitted by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

In identifying each deviation, the permittee shall specify the emission limitation(s), operational restriction(s), and/or control device operating parameter limitation(s) for which the deviation occurred, describe each deviation, and provide the estimated magnitude and duration of each deviation.

These written reports shall satisfy the requirements (in part) of OAC rule 3745-77-07(A)(3)(c) pertaining to the submission of monitoring reports every six months and to the prompt reporting of all deviations. OAC rule 3745-77-07(A)(3)(c) is not fully satisfied until the permittee addresses all other deviations of the federally enforceable requirements specified in the permit.

If an emissions unit has a deviation reporting requirement for a specific emission limitation, operational restriction, or control device operating parameter limitation that is not on a quarterly basis (e.g., within 30 days following the end of the calendar month, or within 30 or 45 days after the exceedance occurs), that deviation reporting requirement overrides the reporting requirements specified in this General Term and Condition for that specific emission limitation, operational restriction, or control device parameter limitation. Following the provisions of that non-quarterly deviation reporting requirement will also satisfy the requirements (in part) of OAC rule 3745-77-07(A)(3)(c) pertaining to the submission of monitoring reports every six months and to the prompt reporting of all deviations, and additional quarterly deviation reports for that specific emission limitation, operational restriction, or control device parameter limitation are not required pursuant to this General Term and Condition.

See B.6 below if no deviations occurred during the quarter.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

iii. **All reporting required in accordance with the OAC rule 3745-77-07(A)(3)(c) for other deviations of the federally enforceable permit requirements which are not reported in accordance with General Term and Condition A.1.c.ii above shall be submitted in the following manner:**

Written reports that identify all other deviations of the federally enforceable requirements contained in this permit, including the monitoring, record keeping, and reporting requirements, which are not reported in accordance with General Term and Condition A.1.c.ii above shall be

submitted to the appropriate Ohio EPA District Office or local air agency by January 31 and July 31 of each year; and each report shall cover the previous six calendar months.

In identifying each deviation, the permittee shall specify the federally enforceable requirement for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation.

These semi-annual written reports shall satisfy the reporting requirements of OAC rule 3745-77-07(A)(3)(c) for any deviations from the federally enforceable requirements contained in this permit that are not reported in accordance with General Term and Condition A.1.c.ii above.

If no such deviations occurred during a six-month period, the permittee shall submit a semi-annual report which states that no such deviations occurred during that period.
(Authority for term: OAC rules 3745-77-07(A)(3)(c)(i) and (ii))

iv. Each written report shall be signed by a responsible official certifying that, "based on information and belief formed after reasonable inquiry, the statements and information in the report (including any written malfunction reports required by OAC rule 3745-15-06 that are referenced in the deviation reports) are true, accurate, and complete."
(Authority for term: OAC rule 3745-77-07(A)(3)(c)(iv))

v. Reports of any required monitoring and/or record keeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

2. Scheduled Maintenance

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. Except as provided in OAC rule 3745-15-06(A)(3), any scheduled maintenance necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s). Any scheduled maintenance, as defined in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation (or control requirement) shall be reported in the same manner as described for malfunctions in General Term and Condition A.1.c.i above.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

3. Risk Management Plans

If applicable, the permittee shall develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. (“Act”); and, pursuant to 40 C.F.R. 68.215(a), the permittee shall submit either of the following:

a. a compliance plan for meeting the requirements of 40 C.F.R. Part 68 by the date specified in 40 C.F.R. 68.10(a) and OAC 3745-104-05(A); or

b. as part of the compliance certification submitted under 40 C.F.R. 70.6(c)(5), a certification statement that the source is in compliance with all requirements of 40 C.F.R. Part 68 and OAC Chapter 3745-104, including the registration and submission of the risk management plan.

(Authority for term: OAC rule 3745-77-07(A)(4))

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

(Authority for term: OAC rule 3745-77-07(A)(5))

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.
(Authority for term: OAC rule 3745-77-07(A)(6))

6. General Requirements

a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.

b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.

c. This permit may be modified, reopened, revoked, or revoked and reissued, for cause, in accordance with A.10 below. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.

d. This permit does not convey any property rights of any sort, or any exclusive privilege.

e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

(Authority for term: OAC rule 3745-77-07(A)(7))

7. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78.
(Authority for term: OAC rule 3745-77-07(A)(8))

8. Marketable Permit Programs

No revision of this permit is required under any approved economic incentive, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in this permit.
(Authority for term: OAC rule 3745-77-07(A)(9))

9. Reasonably Anticipated Operating Scenarios

The permittee is hereby authorized to make changes among operating scenarios authorized in this permit without notice to the Ohio EPA, but, contemporaneous with making a change from one operating scenario to another, the permittee must record in a log at the permitted facility the scenario under which the permittee is operating. The permit shield provided in these general terms and conditions shall apply to all operating scenarios authorized in this permit.
(Authority for term: OAC rule 3745-77-07(A)(10))

10. Reopening for Cause

This Title V permit will be reopened prior to its expiration date under the following conditions:

a. Additional applicable requirements under the Act become applicable to one or more emissions units covered by this permit, and this permit has a remaining term of three or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to paragraph (E)(1) of OAC rule 3745-77-08.

b. This permit is issued to an affected source under the acid rain program and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit, and shall not require a reopening of this permit.

c. The Director of the Ohio EPA or the Administrator of the U.S. EPA determines that the federally applicable requirements in this permit are based on a material mistake, or that inaccurate statements were made in establishing the emissions standards or other terms and conditions of this permit related to such federally applicable requirements.

d. The Administrator of the U.S. EPA or the Director of the Ohio EPA determines that this permit must be revised or revoked to assure compliance with the applicable requirements.

(Authority for term: OAC rules 3745-77-07(A)(12) and 3745-77-08(D))

11. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

(Authority for term: OAC rule 3745-77-07(B))

12. Compliance Requirements

a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this Title V permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:

i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.

ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with paragraph (E) of OAC rule 3745-77-03.

iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.

c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

d. Compliance certifications concerning the terms and conditions contained in this permit that are federally enforceable emission limitations, standards, or work practices, shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) and the Administrator of the U.S. EPA in the following manner and with the following content:

i. Compliance certifications shall be submitted annually on a calendar year basis. The annual certification shall be submitted on or before April 30th of each year during the permit term.
ii. Compliance certifications shall include the following:
   (a) An identification of each term or condition of this permit that is the basis of the certification.
   (b) The permittee's current compliance status.
   (c) Whether compliance was continuous or intermittent.
   (d) The method(s) used for determining the compliance status of the source currently and over the required reporting period.
   (e) Such other facts as the Director of the Ohio EPA may require in the permit to determine the compliance status of the source.
iii. Compliance certifications shall contain such additional requirements as may be specified pursuant to sections 114(a)(3) and 504(b) of the Act.

(Authority for term: OAC rules 3745-77-07(C)(1),(2),(4) and (5) and ORC section 3704.03(L))

13. Permit Shield

a. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC rule 3745-77-07) shall be deemed compliance with the applicable requirements identified and addressed in this permit as of the date of permit issuance.

b. This permit shield provision shall apply to any requirement identified in this permit pursuant to OAC rule 3745-77-07(F)(2), as a requirement that does not apply to the source or to one or more emissions units within the source.

(Authority for term: OAC rule 3745-77-07(F))

14. Operational Flexibility

The permittee is authorized to make the changes identified in OAC rule 3745-77-07(H)(1)(a) to (H)(1)(c) within the permitted stationary source without obtaining a permit revision, if such change is not a modification under any provision of Title I of the Act [as defined in OAC rule 3745-77-01(JJ)], and does not result in an exceedance of the emissions allowed under this permit (whether expressed therein as a rate of emissions or in terms of total emissions), and the permittee provides the Administrator of the U.S. EPA and the appropriate Ohio EPA District Office or local air agency with written notification within a minimum of seven days in advance of the proposed changes, unless the change is associated with, or in response to, emergency conditions. If less than seven days notice is provided because of a need to respond more quickly to such emergency conditions, the permittee shall provide notice to the Administrator of the U.S. EPA and the appropriate District Office of the Ohio EPA or local

air agency as soon as possible after learning of the need to make the change. The notification shall contain the items required under OAC rule 3745-77-07(H)(2)(d).
(Authority for term: OAC rules 3745-77-07(H)(1) and (2))

15. Emergencies

The permittee shall have an affirmative defense of emergency to an action brought for noncompliance with technology-based emission limitations if the conditions of OAC rule 3745-77-07(G)(3) are met. This emergency defense provision is in addition to any emergency or upset provision contained in any applicable requirement.
(Authority for term: OAC rule 3745-77-07(G))

16. Off-Permit Changes

The owner or operator of a Title V source may make any change in its operations or emissions at the source that is not specifically addressed or prohibited in the Title V permit, without obtaining an amendment or modification of the permit, provided that the following conditions are met:

a. The change does not result in conditions that violate any applicable requirements or that violate any existing federally enforceable permit term or condition.

b. The permittee provides contemporaneous written notice of the change to the Director and the Administrator of the U.S. EPA. Such written notice shall describe each such change, the date of such change, any change in emissions or pollutants emitted, and any federally applicable requirement that would apply as a result of the change.

c. The change shall not qualify for the permit shield under OAC rule 3745-77-07(F).

d. The permittee shall keep a record describing all changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

e. The change is not subject to any applicable requirement under Title IV of the Act or is not a modification under any provision of Title I of the Act.

Paragraph (I) of rule 3745-77-07 of the Administrative Code applies only to modification or amendment of the permittee's Title V permit. The change made may require a permit to install under Chapter 3745-31 of the Administrative Code if the change constitutes a modification as defined in that Chapter. Nothing in paragraph (I) of rule 3745-77-07 of the Administrative Code shall affect any applicable obligation under Chapter 3745-31 of the Administrative Code.
(Authority for term: OAC rule 3745-77-07(I))

17. Compliance Method Requirements

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee, including but not limited to, any challenge to the Credible Evidence Rule (see 62 Fed. Reg. 8314, Feb. 24, 1997), in the context of any future proceeding.
(This term is provided for informational purposes only.)

18. Insignificant Activities

Each insignificant activity that has one or more applicable requirements shall comply with those applicable requirements.
(Authority for term: OAC rule 3745-77-07(A)(1))

19. Permit to Install Requirement

Prior to the "installation" or "modification" of any "air contaminant source," as those terms are defined in OAC rule 3745-31-01, a permit to install must be obtained from the Ohio EPA pursuant to OAC Chapter 3745-31.
(Authority for term: OAC rule 3745-77-07(A)(1))

20. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.
(Authority for term: OAC rule 3745-77-07(A)(1))

21. Permanent Shutdown of an Emissions Unit

The permittee may notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification by the responsible official of the date on which the emissions unit was permanently shut down. Authorization to operate the affected part or activity of the stationary source shall cease upon the date certified by the responsible official that the emissions unit was permanently shut down.

If an emissions unit is permanently shut down (i.e., that has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31 and therefore ceases to meet the definition of an "emissions unit" as defined in OAC rule 3745-77-01(O)), rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the date of the certification and submission to Ohio EPA, to meet any monitoring, record keeping, reporting, or testing requirements, applicable to that emissions unit, except for any residual requirements, such as the quarterly deviation reports, semi-annual deviation reports and annual compliance certification covering the period during which the emissions unit last operated. All records relating to the shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law.

No emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit to install pursuant to OAC Chapter 3745-31.

B. *State Only Enforceable Section*

1. Reporting Requirements Related to Monitoring and Record Keeping Requirements

The permittee shall submit required reports in the following manner:

a. Reports of any required monitoring and/or record keeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (i) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and record keeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. In identifying each deviation, the permittee shall specify the applicable requirement for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

2. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

3. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

4. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

5. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

6. Additional Reporting Requirements When There Are No Deviations of <u>Federally Enforceable</u> Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

If no emission limitation (or control requirement), operational restriction and/or control device parameter limitation deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

The permittee is not required to submit a quarterly report which states that no deviations occurred during that quarter for the following situations:

a. where an emissions unit has deviation reporting requirements for a specific emission limitation, operational restriction, or control device parameter limitation that override the deviation reporting requirements specified in General Term and Condition A.1.c.ii;

b. where an uncontrolled emissions unit has no monitoring, record keeping, or reporting requirements and the emissions unit's applicable emission limitations are established at the potentials to emit; and

c. where the company's responsible official has certified that an emissions unit has been permanently shut down.

Part II - Specific Facility Terms and Conditions

A. State and Federally Enforcable Section

1. Subpart EEEEE--National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries

What This Subpart Covers

63.7680 What is the purpose of this subpart?
63.7681 Am I subject to this subpart?
63.7682 What parts of my foundry does this subpart cover?
63.7683 When do I have to comply with this subpart?

Emissions Limitations

63.7690 What emissions limitations must I meet?

Work Practice Standards

63.7700 What work practice standards must I meet?

Operation and Maintenance Requirements

63.7710 What are my operation and maintenance requirements?

General Compliance Requirements

63.7720 What are my general requirements for complying with this subpart?

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63.7734 How do I demonstrate initial compliance with the emissions limitations that apply to me?
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A. State and Federally Enforcable Section (continued)

Continuous Compliance Requirements

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Definitions

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Tables to Subpart EEEEE of Part 63
Table 1 to Subpart EEEEE of Part 63 - Applicability of General Provisions to Subpart EEEEE

A. State and Federally Enforcable Section (continued)

2. What this Subpart Covers

63.7680 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for iron and steel foundries. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart.

63.7681 Am I subject to this subpart?

You are subject to this subpart if you own or operate an iron and steel foundry that is (or is part of) a major source of hazardous air pollutant (HAP) emissions. Your iron and steel foundry is a major source of HAP for purposes of this subpart if it emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year or if it is located at a facility that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year.

63.7682 What parts of my foundry does this subpart cover?

(a) The affected source is each new or existing iron and steel foundry.

(b) This subpart covers emissions from metal melting furnaces, scrap preheaters, pouring areas, pouring stations, automated conveyor and pallet cooling lines, automated shakeout lines, and mold and core making lines. This subpart also covers fugitive emissions from foundry operations.

(c) An affected source is existing if you commenced construction or reconstruction of the affected source before December 23, 2002.

(d) An affected source is new if you commenced construction or reconstruction of the affected source on or after December 23, 2002. An affected source is reconstructed if it meets the definition of "reconstruction" in 63.2.

A. State and Federally Enforcable Section (continued)

63.7683 When do I have to comply with this subpart?

(a) Except as specified in paragraph (b) of this section, if you have an existing affected source, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you no later than [INSERT DATE 3 YEARS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(b) If you have an existing affected source, you must comply with the work practice standards in 63.7700(b) or (c), as applicable, no later than [INSERT DATE 1 YEAR AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(c) If you have a new affected source for which the initial startup date is on or before [INSERT DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you by [INSERT DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(c) If you have a new affected source for which the initial startup date is after [INSERT DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you upon initial startup.

(d) If your iron and steel foundry is an area source that becomes a major source of HAP, you must meet the requirements of 63.6(c)(5).

(e) You must meet the notification and schedule requirements in 63.7750. Note that several of these notifications must be submitted before the compliance date for your affected source.

A. State and Federally Enforcable Section (continued)

3. Emissions Limitation

63.7690 What emissions limitations must I meet?

(a) You must meet each emissions limit or standard in paragraphs (a)(1) through (11) of this section that applies to you.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater a an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for particulate matter (PM) in paragraph (a)(1)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(1)(ii) of this section:

(i) 0.005 grains of PM per dry standard cubic foot (gr/dscf), o
(ii) 0.0004 gr/dscf of total metal HAP

(2) For each cupola metal melting furnace at an existing iron and steel foundry, you must not discharg emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(2)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(2)(ii) of this section:

(i) 0.006 gr/dscf of PM, o
(ii) 0.0005 gr/dscf of total metal HAP

(3) For each cupola metal melting furnace or electric arc metal melting furnace at a new iron and steel foundry you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(3)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(3)(ii) of this section:

(i) 0.002 gr/dscf of PM, o
(ii) 0.0002 gr/dscf of total metal HAP

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry, yo must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(4)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(4)(ii) of this section

(i) 0.001 gr/dscf of PM, o
(ii) 0.00008 gr/dscf of total metal HAP

A. State and Federally Enforcable Section (continued)

(5) For each pouring station at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(5)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(5)(ii) of this section:

(i) 0.010 gr/dscf of PM, or
(ii) 0.0008 gr/dscf of total metal HAP.

(6) For each pouring area or pouring station at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(6)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(6)(ii) of this section:

(i) 0.002 gr/dscf of PM, or
(ii) 0.0002 gr/dscf of total metal HAP.

(7) For each building or structure housing any emissions source at the iron and steel foundry, you must not discharge any fugitive emissions to the atmosphere that exhibit opacity greater than 20 percent (6-minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, you must not discharge emissions of volatile organic hazardous air pollutants (VOHAP) through a conveyance to the atmosphere that exceed 20 parts per million by volume (ppmv) corrected to 10 percent oxygen.

(9) As an alternative to the work practice standard in 63.7700(e) for a scrap preheater at an existing iron and steel foundry or in ?63.7700(f) for a scrap preheater at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed a flow-weighted average of 20 ppmv.

(11) For each triethylamine (TEA) cold box mold or core making line at a new or existing iron and steel foundry, you must meet either the emissions limit in paragraph (a)(11)(i) of this section or, alternatively the emissions standard in paragraph (a)(11)(ii) of this section:

(i) You must not discharge emissions of TEA through a conveyance to the atmosphere that exceed 1 ppmv, as determined when scrubbing with fresh acid solution; or
(ii) You must reduce emissions of TEA from each TEA cold box mold or core making line by at least 99 percent, as determined when scrubbing with fresh acid solution.

(b) You must meet each operating limit in paragraphs (b)(1) through (5) of this section that applies to you.

(1) You must install, operate, and maintain a capture and collection system for all emissions sources subject to an emissions limit or standard for VOHAP or TEA in paragraphs (a)(8) through (11) of this section.

(i) Each capture and collection system must meet accepted engineering standards, such as those published by the American Conference of Governmental Industrial Hygienists.
(ii) You must operate each capture system at or above the lowest value or settings established as operating limits in your operation and maintenance plan.

A. State and Federally Enforcable Section (continued)

(2) You must operate each wet scrubber applied to emissions from a metal melting furnace, scrap preheater, pouring area, or pouring station subject to an emissions limit for PM or total metal HAP in paragraphs (a)(1) through (6) of this section such that the 3-hour average pressure drop and scrubber water flow rate does not fall below the minimum levels established during the initial or subsequent performance test.

(3) You must operate each combustion device applied to emissions from a cupola metal melting furnace subject to the emissions limit for VOHAP in paragraph (a)(8) of this section, such that the 15-minute average combustion zone temperature does not fall below 1,300 degrees Fahrenheit (F). Periods when the cupola is off blast and for 15 minutes after going on blast from an off blast condition are not included in the 15-minute average.

(4) You must operate each combustion device applied to emissions from a scrap preheater subject to the emissions limit for VOHAP in paragraph (a)(9) of this section or from a TEA cold box mold or core making line subject to the emissions limit for TEA in paragraph (a)(11) of this section, such that the 3-hour average combustion zone temperature does not fall below the minimum level established during the initial or subsequent performance test.

(5) You must operate each wet acid scrubber applied to emissions from a TEA cold box mold or core making line subject to the emissions limit for TEA in paragraph (a)(11) of this section such that:

(i) The 3-hour average scrubbing liquid flow rate does not fall below the minimum level established during the initial or subsequent performance test; and
(ii) The 3-hour average pH of the scrubber blowdown, as measured by a continuous parameter monitoring system (CPMS), does not exceed 4.5 or the pH of the scrubber blowdown, as measured once every 8 hours during process operations, does not exceed 4.5.

(c) If you use a control device other than a baghouse, wet scrubber, wet acid scrubber, or combustion device, you must prepare and submit a monitoring plan containing the information listed in paragraphs (c)(1) through (5) of this section. The monitoring plan is subject to approval by the Administrator.

(1) A description of the device;

(2) Test results collected in accordance with 63.7732 verifying the performance of the device for reducing emissions of PM, total metal HAP, VOHAP, or TEA to the levels required by this subpart;

(3) A copy of the operation and maintenance plan required by 63.7710(b);

(4) A list of appropriate operating parameters that will be monitored to maintain continuous compliance with the applicable emissions limitation(s); and

(5) Operating parameter limits based on monitoring data collected during the performance test.

A. State and Federally Enforcable Section (continued)

4. Work Practice Standards

63.7700 What work practice standards must I meet?

(a) You must comply with the certification requirements in paragraph (b) of this section or prepare and implement a plan for the selection and inspection of scrap according to the requirements in paragraph (c) of this section.

(b) You must prepare and operate at all times according to a written certification that the foundry purchases and uses only certified-metal ingots, pig iron, slitter, or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, oil filters, oily turnings, lead components, mercury switches, plastics, or organic liquids.

(c) You must prepare and operate at all times according to a written plan for the selection and inspection of iron and steel scrap to minimize, to the extent practicable, the amount of organics and HAP metals in the charge materials used by the iron and steel foundry. This scrap selection and inspection plan is subject to approval by the Administrator. You must keep a copy of the plan onsite and readily available to all plant personnel with materials acquisition or inspection duties. You must provide a copy of the material specifications to each of your scrap vendors. Each plan must include the information specified in paragraphs (c)(1) through (3) of this section.

(1) A materials acquisition program to limit organic contaminants according to the requirements in paragraph (c)(1)(i) or (ii) of this section.

(i) For scrap charged to a scrap preheater, electric arc metal melting furnace, or electric induction metal melting furnaces, specifications for scrap materials to be depleted (to the extent practicable) of the presence of used oil filters, plastic parts, organic liquids, and a program to ensure the scrap materials are drained of free liquids; or
(ii) For scrap charged to a cupola metal melting furnace, specifications for scrap materials to be depleted (to the extent practicable) of the presence of plastic, and a program to ensure the scrap materials are drained of free liquids.

(2) A materials acquisition program specifying that the scrap supplier remove accessible mercury switches from the trunks and hoods of any automotive bodies contained in the scrap and remove accessible lead components such as batteries and wheel weights. You must obtain and maintain onsite a copy of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable.

A. State and Federally Enforcable Section (continued)

(3) Procedures for visual inspection of a representative portion, but not less than 10 percent, of all incoming scrap shipments to ensure the materials meet the specifications.

(i) The inspection procedures must identify the location(s) where inspections are to be performed for each type of shipment. The selected location(s) must provide a reasonable vantage point, considering worker safety, for visual inspection.
(ii) The inspection procedures must include recordkeeping requirements that document each visual inspection and the results.
(iii) The inspection procedures must include provisions for rejecting or returning entire or partial scrap shipments that do not meet specifications and limiting purchases from vendors whose shipments fail to meet specifications for more than three inspections in one calender year.

(d) For each furan warm box mold or core making line in a new or existing iron and steel foundry, you must use a binder chemical formulation that does not contain methanol as a specific ingredient of the catalyst formulation as determined by the Material Safety Data Sheet. This requirement does not apply to the resin portion of the binder system.

(e) For each scrap preheater at an existing iron and steel foundry, you must meet either the requirement in paragraph (e)(1) or (2) of this section. As an alternative to the requirement in paragraph (e)(1) or (2) of this section, you must meet the VOHAP emissions limit in 63.7690(a)(9).

(1) You must install, operate, and maintain a gas-fired preheater where the flame directly contacts the scrap charged; or

(2) You must charge only material that is subject to and in compliance with the scrap certification requirement in paragraph (b) of this section.

(f) For each scrap preheater at a new iron and steel foundry, you must charge only material that is subject to and in compliance with the scrap certification requirement in paragraph (b) of this section. As an alternative to this requirement, you must meet the VOHAP emissions limit in 63.7690(a)(9).

5. Operation and Maintenance Requirements

63.7710 What are my operation and maintenance requirements?

(a) As required by 63.6(e)(1)(i), you must always operate and maintain your iron and steel foundry, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by this subpart.

(b) You must prepare and operate at all times according to a written operation and maintenance plan for each capture and collection system and control device for an emissions source subject to an emissions limit in 63.7690(a). Your operation and maintenance plan also must include procedures for igniting gases from mold vents in pouring areas and pouring stations that use a sand mold system. This operation and maintenance plan is subject to approval by the Administrator. Each plan must contain the elements described in paragraphs (b)(1) through (6) of this section.

(1) Monthly inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection must include observations of the physical appearance of the equipment (e.g., presence of holes in the ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). The operation and maintenance plan must also include requirements to repair the defect or deficiency as soon as practicable.

A. State and Federally Enforcable Section (continued)

(2) Operating limits for each capture system for an emissions source subject to an emissions limit or standard for VOHAP or TEA in 63.7690(a)(8) through (11). You must establish the operating according to the requirements in paragraphs (b)(2)(i) through (iii) of this section.

(i) Select operating limit parameters appropriate for the capture system design that are representative and reliable indicators of the performance of the capture system. At a minimum, you must use appropriate operating limit parameters that indicate the level of the ventilation draft and damper position settings for the capture system when operating to collect emissions, including revised settings for seasonal variations. Appropriate operating limit parameters for ventilation draft include, but are not limited to: volumetric flow rate through each separately ducted hood, total volumetric flow rate at the inlet to the control device to which the capture system is vented, fan motor amperage, or static pressure. Any parameter for damper position setting may be used that indicates the duct damper position related to the fully open setting.

(ii) For each operating limit parameter selected in paragraph (b)(2)(i) of this section, designate the value or setting for the parameter at which the capture system operates during the process operation. If your operation allows for more than one process to be operating simultaneously, designate the value or setting for the parameter at which the capture system operates during each possible configuration that you may operate (i.e., the operating limits with one furnace melting, two melting, as applicable to your plant).

(iii) Include documentation in your plan to support your selection of the operating limits established for your capture system. This documentation must include a description of the capture system design, a description of the capture system operating during production, a description of each selected operating limit parameter, a rationale for why you chose the parameter, a description of the method used to monitor the parameter according to the requirements of 63.7740(a), and the data used to set the value or setting for the parameter for each of your process configurations.

(3) Preventative maintenance plan for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

(4) A site-specific monitoring plan for each bag leak detection system. For each bag leak detection system that operates on the triboelectric effect, the monitoring plan must be consistent with the recommendations contained in the U.S. Environmental Protection Agency guidance document "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015). This baghouse monitoring plan is subject to approval by the Administrator. The owner or operator shall operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. The plan must address all of the items identified in paragraphs (b)(4)(i) through (v) of this section.

(i) Installation of the bag leak detection system.

(ii) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established.

(iii) Operation of the bag leak detection system including quality assurance procedures.

(iv) How the bag leak detection system will be maintained including a routine maintenance schedule and spare parts inventory list.

(v) How the bag leak detection system output will be recorded and stored.

(5) Corrective action plan for each baghouse. The plan must include the requirement that, in the event a bag leak detection system alarm is triggered, you must initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Corrective actions taken may include, but are not limited to:

A. State and Federally Enforcable Section (continued)

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system.

(vi) Making process changes.

(vii) Shutting down the process producing the PM emissions.

(6) Procedures for providing an ignition source to mold vents of sand mold systems in each pouring area and pouring station unless you determine the mold vent gases either are not ignitable, ignite automatically, or cannot be ignited due to accessibility or safety issues. You must document and maintain records of this determination. The determination of ignitability, accessibility, and safety may encompass multiple casting patterns provided the castings utilize similar sand-to-metal ratios, binder formulations, and coating materials. The determination of ignitability must be based on observations of the mold vents within 5 minutes of pouring, and the flame must be present for at least 15 seconds for the mold vent to be considered ignited. For the purpose of this determination:

(i) Mold vents that ignite more than 75 percent of the time without the presence of an auxiliary ignition source are considered to ignite automatically; and

(ii) Mold vents that do not ignite automatically and cannot be ignited in the presence of an auxiliary ignition source more than 25 percent of the time are considered to be not ignitable.

6. General Compliance Requirements

63.7720 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart at all times, except during periods of startup, shutdown, or malfunction.

(b) During the period between the compliance date specified for your iron and steel foundry in 63.7683 and the date when applicable operating limits have been established during the initial performance test, you must maintain a log detailing the operation and maintenance of the process and emissions control equipment.

(c) You must develop and implement a written startup, shutdown, and malfunction plan according to the provisions in 63.6(e)(3). The startup, shutdown, and malfunction plan also must specify what constitutes a shutdown of a cupola and how to determine that operating conditions are normal following startup of a cupola.

A. State and Federally Enforcable Section (continued)

7. Initial Compliance Requirements

63.7730 By what date must I conduct performance tests or other initial compliance demonstrations?

(a) As required by 63.7(a)(2), you must conduct a performance test no later than 180 calendar days after the compliance date that is specified in 63.7683 for your iron and steel foundry to demonstrate initial compliance with each emissions limitation in 63.7690 that applies to you.

(b) For each work practice standard in 63.7700 and each operation and maintenance requirement in 63.7710 that applies to you where initial compliance is not demonstrated using a performance test, you must demonstrate initial compliance no later than 30 calendar days after the compliance date that is specified for your iron and steel foundry in 63.7683.

(c) If you commenced construction or reconstruction between December 23, 2002 and [DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must demonstrate initial compliance with either the proposed emissions limit or the promulgated emissions limit no later than [180 CALENDAR DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER] or no later than 180 calendar days after startup of the source, whichever is later, according to 63.7(a)(2)(ix).

(d) If you commenced construction or reconstruction between December 23, 2002 and [DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], and you chose to comply with the proposed emissions limit when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emissions limit by [3 YEARS AND 180 CALENDAR DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER] or after startup of the source, whichever is later, according to 63.7(a)(2)(ix).

63.7731 When must I conduct subsequent performance tests?

(a) You must conduct subsequent performance tests to demonstrate compliance with all applicable PM or total metal HAP, VOHAP, and TEA emissions limitations in 63.7690 for your iron and steel foundry no less frequently than every 5 years. The requirement to conduct performance tests every 5 years does not apply to an emissions source for which a continuous emissions monitoring system (CEMS) is used to demonstrate continuous compliance.

(b) You must conduct subsequent performance tests to demonstrate compliance with the opacity limit in 63.7690(a)(7) for your iron and steel foundry no less frequently than once every 6 months.

63.7732 What test methods and other procedures must I use to demonstrate initial compliance with the emissions limitations?

(a) You must conduct each performance test that applies to your iron and steel foundry according to the requirements in 63.7(e)(1) and the conditions specified in paragraphs (b) through (h) of this section.

(b) To determine compliance with the applicable emissions limit for PM in 63.7690(a)(1) through (6) for a metal melting furnace, scrap preheater, pouring station, or pouring area, follow the test methods and procedures in paragraphs (b)(1) through (5) of this section.

(1) Determine the concentration of PM according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (b)(1)(i) through (v) of this section.

A. State and Federally Enforcable Section (continued)

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 5, 5B, 5D, 5F, or 5I, as applicable, to determine the PM concentration. The PM concentration is determined using only the front-half (probe rinse and filter) of the PM catch.

(2) Collect a minimum sample volume of 60 dscf of gas during each PM sampling run. A minimum of three valid test runs are needed to comprise a performance test.

(3) For cupola metal melting furnaces, sample only during times when the cupola is on blast.

(4) For electric arc and electric induction metal melting furnaces, sample only when metal is being melted.

(5) For scrap preheaters, sample only when scrap is being preheated.

(c) To determine compliance with the applicable emissions limit for total metal HAP in 63.7690(a)(1) through (6) for a metal melting furnace, scrap preheater, pouring station, or pouring area, follow the test methods and procedures in paragraphs (c)(1) through (5) of this section.

(1) Determine the concentration of total metal HAP according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (c)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 29 to determine the total metal HAP concentration.

(2) Collect a minimum sample volume of 60 dscf of gas during each total metal HAP sampling run. A minimum of three valid test runs are needed to comprise a performance test.

(3) For cupola metal melting furnaces, sample only during times when the cupola is on blast.

(4) For electric arc and electric induction metal melting furnaces, sample only when metal is being melted.

(5) For scrap preheaters, sample only when scrap is being preheated.

(d) To determine compliance with the opacity limit in 63.7690(a)(7) for fugitive emissions from buildings or structures housing any emissions source at the iron and steel foundry, follow the procedures in paragraphs (d)(1) and (2) of this section.

A. State and Federally Enforcable Section (continued)

(1) Using a certified observer, conduct each opacity test according to the requirements in EPA Method 9 (40 CFR part 60, appendix A) and 63.6(h)(5).

(2) Conduct each test such that the opacity observations overlap with the PM performance tests.

(e) To determine compliance with the applicable VOHAP emissions limit in 63.7690(a)(8) for a cupola metal melting furnace or in 63.7690(a)(9) for a scrap preheater, follow the test methods and procedures in paragraphs (e)(1) through (4) of this section.

(1) Determine the VOHAP concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (e)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 18 to determine the VOHAP concentration. Alternatively, you may use Method 25 to determine the concentration of total gaseous nonmethane organics (TGNMO) or Method 25A to determine the concentration of total organic compounds (TOC), using hexane as the calibration gas.

A. State and Federally Enforcable Section (continued)

(2) Determine the average VOHAP, TGNMO, or TOC concentration using a minimum of three valid test runs. Each test run must include a minimum of 60 continuous operating minutes.

(3) For a cupola metal melting furnace, correct the measured concentration of VOHAP, TGNMO, or TOC for oxygen content in the gas stream using Equation 1 of this section:

C SUB {VOHAP} = [10.9% / (20.9% - %O2)]

Where:

C SUB {VOHAP}= Concentration of VOHAP in ppmv as measured by Method 18 in 40 CFR part 60, appendix A or the concentration of TGNMO or TOC in ppmv as hexane as measured by Method 25 or 25A in 40 CFR part 60, appendix A; and

%O2= Oxygen concentration in gas stream, percent by volume (dry basis).

(4) For a cupola metal melting furnace, measure the combustion zone temperature of the combustion device with the CPMS required in 63.7740(d) during each sampling run in 15-minute intervals. Determine and record the 15-minute average of the three runs.

(f) Follow the applicable procedures in paragraphs (f)(1) through (3) of this section to determine compliance with the VOHAP emissions limit in 63.7690(a)(10) for automated pallet cooling lines or automated shakeout lines.

(1) Follow these procedures to demonstrate compliance by direct measurement of total hydrocarbons (a surrogate for VOHAP) using a volatile organic compound (VOC) CEMS.

(i) Using the VOC CEMS required in ?63.7740(g), measure and record the concentration of total hydrocarbons (as hexane) for 180 continuous operating minutes. You must measure emissions at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Reduce the monitoring data to hourly averages as specified in 63.8(g)(2).

(iii) Compute and record the 3-hour average of the monitoring data.

A. State and Federally Enforcable Section (continued)

(2) As an alternative to the procedures in paragraph (f)(1) of this section, you may demonstrate compliance with the VOHAP emissions limit in 63.7690(a)(10) by establishing a site-specific TOC emissions limit that is correlated to the VOHAP emissions limit according to the procedures in paragraph (f)(2)(i) through (ix) of this section.

(i) Determine the VOHAP concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraph (f)(2)(ii) through (vi) of this section.

(ii) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(iii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iv) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(v) Method 4 to determine the moisture content of the stack gas.

(vi) Method 18 to determine the VOHAP concentration. Alternatively, you may use Method 25 to determine the concentration of TGNMO using hexane as the calibration gas.

(vii) Using the CEMS required in 63.7740(g), measure and record the concentration of total hydrocarbons (as hexane) during each of the Method 18 (or Method 25) sampling runs. You must measure emissions at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(viii) Calculate the average VOHAP (or TGNMO) concentration for the source test as the arithmetic average of the concentrations measured for the individual test runs, and determine the average concentration of total hydrocarbon (as hexane) as measured by the CEMS during all test runs.

A. State and Federally Enforcable Section (continued)

(ix) Calculate the site-specific VOC emissions limit using Equation 2 of this section:

VOC SUB {limit} = 20 [C SUB {VOHAP}, ave / C SUB {CEM}]

Where:

C SUB {VOHAP}, avg= Average concentration of VOHAP for the source test in ppmv as measured by Method 18 in 40 CFR part 60, appendix A or the average concentration of TGNMO for the source test in ppmv as hexane as measured by Method 25 in 40 CFR part 60, appendix A; and

C SUB {CEM}= Average concentration of total hydrocarbons in ppmv as hexane as measured using the CEMS during the source test.

(3) For two or more exhaust streams from one or more automated conveyor and pallet cooling lines or automated shakeout lines, compute the flow-weighted average concentration of VOHAP emissions for each combination of exhaust streams using Equation 3 of this section (See :

C SUB {W} = [SUMMATION FROM {i = 1} TO n (C SUB {i}) x (Q SUB {i})] OVER [SUMMATION FROM {i = 1} TO n (Q SUB {i})]

Where:

C SUB {W}= Flow-weighted concentration of VOHAP or VOC, ppmv (as hexane);

C SUB {i}= Concentration of VOHAP or VOC from exhaust stream "i", ppmv (as hexane);

n= Number of exhaust streams sampled; and

Q SUB {i}= Volumetric flow rate of effluent gas from exhaust stream "i," in dry standard cubic feet per minute (dscfm).

(g) To determine compliance with the emissions limit or standard in ?63.7690(a)(11) for a TEA cold box mold or core making line, follow the test methods in 40 CFR part 60, appendix A, specified in paragraphs (g)(1) through (4) of this section.

(1) Determine the TEA concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (g)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. If you elect to meet the 99 percent reduction standard, sampling sites must be located both at the inlet to the control device and at the outlet of the control device prior to any releases to the atmosphere. If you elect to meet the concentration limit, the sampling site must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 18 to determine the TEA concentration. The Method 18 sampling option and time must be sufficiently long such that either the TEA concentration in the field sample is at least 5 times the limit of detection for the analytical method or the test results calculated using the laboratory's reported analytical detection limit for the specific field samples are less than 1/5 of the applicable emissions limit. The adsorbent tube approach, as described in Method 18, may be required to achieve the necessary analytical detection limits. The sampling time must be at least 1 hour in all cases.

A. State and Federally Enforcable Section (continued)

(2) Conduct the test as soon as practicable after adding fresh acid solution and the system has reached normal operating conditions.

(3) If you use a wet acid scrubber that is subject to the operating limit in 63.7690(b)(5)(ii) for pH level, determine the pH of the scrubber blowdown using the procedures in paragraph (g)(3)(i) or (ii) of this section.

(i) Measure the pH of the scrubber blowdown with the CPMS required in ?63.7740(f)(2) during each TEA sampling run in intervals of no more than 15 minutes. Determine and record the 3-hour average; or

(ii) Measure and record the pH level using the probe and meter required in 63.7740(f)(2) once each sampling run. Determine and record the average pH level for the three runs.

(4) If you are subject to the 99 percent reduction standard, calculate the mass emissions reduction using Equation 4 of this section:

% reduction = [(Ei - Eo) / Ei]

Where:

Ei = Mass emissions rate of TEA at control device inlet, kg/hr; and

Eo = Mass emissions rate of TEA at control device outlet, kg/hr.

(h) To determine compliance with the PM or total metal HAP emissions limits in 63.7690(a)(1) through (6) when one or more regulated emissions sources are combined with either another regulated emissions source subject to a different emissions limit or other non-regulated emissions sources, you may demonstrate compliance using one of the procedures in paragraphs (h)(1) through (3) of this section.

(1) Meet the most stringent applicable emissions limit for the regulated emissions sources included in the combined emissions stream for the combined emissions stream.

(2) Use the procedures in paragraphs (h)(2)(i) through (iii) of this section.

(i) Determine the volumetric flow rate of the individual regulated streams for which emissions limits apply.

(ii) Calculate the flow-weighted average emissions limit, considering only the regulated streams, using Equation 3 of this section, except Cw is the flow-weighted average emissions limit for PM or total metal HAP in the exhaust stream, gr/dscf; and Ci is the concentration of PM or total metal HAP in exhaust stream "i", gr/dscf.

(iii) Meet the calculated flow-weighted average emissions limit for the regulated emissions sources included in the combined emissions stream for the combined emissions stream.

A. State and Federally Enforcable Section (continued)

(3) Use the procedures in paragraphs (h)(3)(i) through (iii) of this section.

(i) Determine the PM or total metal HAP concentration of each of the regulated streams prior to the combination with other exhaust streams or control device.

(ii) Measure the flow rate and PM or total metal HAP concentration of the combined exhaust stream both before the control device and calculate the mass removal efficiency of the control device using Equation 4 of this section, except Ei is the mass emissions rate of PM or total metal HAP at the control device inlet, lb/hr and Eo is the mass emissions rate of PM or total metal HAP at control device outlet, lb/hr.

(iii) Meet the applicable emissions limit based on the calculated PM or total metal HAP concentration for the regulated emissions source using Equation 5 of this section:

C SUB {released} = Ci [1 - (% reduction/100)]

Where:

C SUB {released} = Calculated concentration of PM (or total metal HAP) predicted to be released to the atmosphere from the regulated emissions source, in gr/dscf; and

Ci = Concentration of PM (or total metal HAP) in the uncontrolled regulated exhaust stream, in gr/dscf.

63.7733 What procedures must I use to establish operating limits?

(a) For each capture system subject to operating limits in 63.7690(b)(1)(ii), you must establish site-specific operating limits in your operation and maintenance plan according to the procedures in paragraphs (a)(1) through (3) of this section.

(1) Concurrent with applicable emissions and opacity tests, measure and record values for each of the operating limit parameters in your capture system operation and maintenance plan according to the monitoring requirements in 63.7740(a).

(2) For any dampers that are manually set and remain at the same position at all times the capture system is operating, the damper position must be visually checked and recorded at the beginning and end of each run.

(3) Review and record the monitoring data. Identify and explain any times the capture system operated outside the applicable operating limits.

(b) For each wet scrubber subject to the operating limits in 63.7690(b)(2) for pressure drop and scrubber water flow rate, you must establish site-specific operating limits according to the procedures specified in paragraphs (b)(1) and (2) of this section.

(1) Using the CPMS required in 63.7740(c), measure and record the pressure drop and scrubber water flow rate in intervals of no more than 15 minutes during each PM test run.

(2) Compute and record the 3-hour average pressure drop and average scrubber water flow rate for each sampling run in which the applicable emissions limit is met.

(c) For each combustion device applied to emissions from a scrap preheater or TEA cold box mold or core making line subject to the operating limit in 63.7690(b)(4) for combustion zone temperature, you must establish a site-specific operating limit according to the procedures specified in paragraphs (c)(1) and (2) of this section.

A. State and Federally Enforcable Section (continued)

(1) Using the CPMS required in 63.7740(e), measure and record the combustion zone temperature during each sampling run in intervals of no more than 15 minutes.

(2) Compute and record the 3-hour average combustion zone temperature for each sampling run in which the applicable emissions limit is met.

(d) For each acid wet scrubber subject to the operating limit in 63.7690(b)(5), you must establish a site-specific operating limit for scrubbing liquid flow rate according to the procedures specified in paragraphs (d)(1) and (2) of this section.

(1) Using the CPMS required in 63.7740(f), measure and record the scrubbing liquid flow rate during each TEA sampling run in intervals of no more than 15 minutes.

(2) Compute and record the 3-hour average scrubbing liquid flow rate for each sampling run in which the applicable emissions limit is met.

(e) You may change the operating limits for a capture system, wet scrubber, acid wet scrubber, or combustion device if you meet the requirements in paragraphs (e)(1) through (3) of this section.

(1) Submit a written notification to the Administrator of your request to conduct a new performance test to revise the operating limit.

(2) Conduct a performance test to demonstrate compliance with the applicable emissions limitation in 63.7690.

(3) Establish revised operating limits according to the applicable procedures in paragraphs (a) through (d) of this section.

(f) You may use a previous performance test (conducted since December 22, 2002) to establish an operating limit provided the test meets the requirements of this subpart.

A. State and Federally Enforcable Section (continued)

63.7734 How do I demonstrate initial compliance with the emissions limitations that apply to me?

(a) You have demonstrated initial compliance with the emissions limits in 63.7690(a) if:

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in 63.7732(b), did not exceed 0.005 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in 63.7732(c), did not exceed 0.0004 gr/dscf.

(2) For each cupola metal melting furnace at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in 63.7732(b), did not exceed 0.006 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in 63.7732(c), did not exceed 0.0005 gr/dscf.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in 63.7732(b), did not exceed 0.002 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in 63.7732(c), did not exceed 0.0002 gr/dscf.

A. State and Federally Enforcable Section (continued)

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in 63.7732(b), did not exceed 0.001 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in 63.7732(c), did not exceed 0.00008 gr/dscf.

(5) For each pouring station at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, measured according to the performance test procedures in 63.7732(b), did not exceed 0.010 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in 63.7732(c), did not exceed 0.0008 gr/dscf.

(6) For each pouring area or pouring station at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, measured according to the performance test procedures in 63.7732(b), did not exceed 0.002 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in 63.7732(c), did not exceed 0.0002 gr/dscf.

(7) For each building or structure housing any emissions source at the iron and steel foundry, the opacity of fugitive emissions discharged to the atmosphere, determined according to the performance test procedures in 63.7732(d), did not exceed 20 percent (6-minute average), except for one 6-minute average per hour that did not exceed 27 percent opacity.

A. State and Federally Enforcable Section (continued)

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, the average VOHAP concentration, determined according to the performance test procedures in 63.7732(e), did not exceed 20 ppmv corrected to 10 percent oxygen.

(9) For each scrap preheater at an existing iron and steel foundry that does not meet the work practice standards in 63.7700(e)(1) or (2) and for each scrap preheater at a new iron and steel foundry that does not meet the work practice standard in 63.7700(f), the average VOHAP concentration determined according to the performance test procedures in 63.7732(e), did not exceed 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new foundry,

(i) You have reduced the data from the CEMS to 3-hour averages according to the performance test procedures in 63.7732(f)(1) or (2); and

(ii) The 3-hour flow-weighted average VOHAP concentration, measured according to the performance test procedures in 63.7332(f)(1) or (2), did not exceed 20 ppmv.

(11) For each TEA cold box mold or core making line in a new or existing iron and steel foundry, the average TEA concentration, determined according to the performance test procedures in 63.7732(g) did not exceed 1 ppmv or was reduced by 99 percent.

(b) You have demonstrated initial compliance with the operating limits in 63.7690(b) if:

(1) For each capture system subject to the operating limit in 63.7690(b)(1)(ii),

(i) You have established appropriate site-specific operating limits in your operation and maintenance plan according to the requirements in 63.7710(b); and

(ii) You have a record of the operating parameter data measured during the performance test in accordance with 63.7733(a); and

(2) For each wet scrubber subject to the operating limits in 63.7690(b)(2) for pressure drop and scrubber water flow rate, you have established appropriate site-specific operating limits and have a record of the pressure drop and scrubber water flow rate measured during the performance test in accordance with 63.7733(b).

(3) For each combustion device subject to the operating limit in 63.7690(b)(3) for combustion zone temperature, you have a record of the combustion zone temperature measured during the performance test in accordance with 63.7732(e)(4).

(4) For each combustion device subject to the operating limit in 63.7690(b)(4) for combustion zone temperature, you have established appropriate site-specific operating limits and have a record of the combustion zone temperature measured during the performance test in accordance with 63.7733(c).

(5) For each acid wet scrubber subject to the operating limits in 63.7690(b)(5) for scrubbing liquid flow rate and scrubber blowdown pH,

(i) You have established appropriate site-specific operating limits for the scrubbing liquid flow rate and have a record of the scrubbing liquid flow rate measured during the performance test in accordance with 63.7733(d); and

(ii) You have a record of the pH of the scrubbing liquid blowdown measured during the performance test in accordance with 63.7732(g)(3).

A. State and Federally Enforcable Section (continued)

(3) For each combustion device subject to the operating limit in 63.7690(b)(3) for combustion zone temperature, you have a record of the combustion zone temperature measured during the performance test in accordance with 63.7732(e)(4).

(4) For each combustion device subject to the operating limit in 63.7690(b)(4) for combustion zone temperature, you have established appropriate site-specific operating limits and have a record of the combustion zone temperature measured during the performance test in accordance with 63.7733(c).

(5) For each acid wet scrubber subject to the operating limits in 63.7690(b)(5) for scrubbing liquid flow rate and scrubber blowdown pH,

(i) You have established appropriate site-specific operating limits for the scrubbing liquid flow rate and have a record of the scrubbing liquid flow rate measured during the performance test in accordance with 63.7733(d); and

(ii) You have a record of the pH of the scrubbing liquid blowdown measured during the performance test in accordance with 63.7732(g)(3).

63.7735 How do I demonstrate initial compliance with the work practice standards that apply to me?

(a) For each iron and steel foundry subject to the certification requirement in 63.7700(b), you have demonstrated initial compliance if you have certified in your notification of compliance status that: "At all times, your foundry will purchase and use only certified metal ingots, pig iron, slitter, or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, oil filters, oily turnings, lead components, mercury switches, plastics, or organic liquids."

(b) For each iron and steel foundry subject to the requirements in 63.7700(c) for a scrap inspection and selection plan, you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted a written plan to the Administrator for approval according to the requirements in 63.7700(c); and

(2) You will operate at all times according to the plan requirements.

(c) For each furan warm box mold or core making line in a new or existing foundry subject to the work practice standard in 63.7700(d), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You will meet the no methanol requirement for the catalyst portion of each binder chemical formulation; and

(2) You have records documenting your certification of compliance, such as a material safety data sheet (provided that it contains appropriate information), a certified product data sheet, or a manufacturer's hazardous air pollutant data sheet, onsite and available for inspection.

(d) For each scrap preheater at an existing iron and steel foundry subject to the work practice standard in 63.7700(e)(1) or (2), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

A. State and Federally Enforcable Section (continued)

(1) You have installed a gas-fired preheater where the flame directly contacts the scrap charged, you will operate and maintain each gas-fired scrap preheater such that the flame directly contacts the scrap charged, and you have records documenting your certification of compliance that are onsite and available for inspection; or

(2) You will charge only material that is subject to and in compliance with the scrap certification requirements in 63.7700(b) and you have records documenting your certification of compliance that are onsite and available for inspection.

(e) For each scrap preheater at a new iron and steel foundry subject to the work practice standard in 63.7700(f), you have demonstrated initial compliance if you have certified in your notification of compliance status that you will charge only material that is subject to and in compliance with the scrap certification requirements in 63.7700(b) and you have records documenting your certification of compliance that are onsite and available for inspection.

63.7736 How do I demonstrate initial compliance with the operation and maintenance requirements that apply to me?

(a) For each capture system subject to an operating limit in 63.7690(b), you have demonstrated initial compliance if you have met the conditions in paragraphs (a)(1) and (2) of this section.

(1) You have certified in your notification of compliance status that:

(i) You have submitted the capture system operation and maintenance plan to the Administrator for approval according to the requirements of 63.7710(b); and

(ii) You will inspect, operate, and maintain each capture system according to the procedures in the plan.

A. State and Federally Enforcable Section (continued)

(2) You have certified in your performance test report that the system operated during the test at the operating limits established in your operation and maintenance plan.

(b) For each control device subject to an operating limit in 63.7690(b), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted the control device operation and maintenance plan to the Administrator for approval according to the requirements of 63.7710(b); and

(2) You will inspect, operate, and maintain each control device according to the procedures in the plan.

(c) For each bag leak detection system, you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted the bag leak detection system monitoring plan to the Administrator for approval according to the requirements of 63.7710(b);

(2) You will inspect, operate, and maintain each bag leak detection system according to the procedures in the plan; and

(3) You will follow the corrective action procedures for bag leak detection system alarms according to the requirements in the plan.

(d) For each pouring area and pouring station in a new or existing foundry, you have demonstrated initial compliance if you have certified in your notification of compliance status report that:

(1) You have submitted the mold vent ignition plan to the Administrator for approval according to the requirements in 63.7710(b); and

(2) You will follow the procedures for igniting mold vent gases according to the requirements in the plan.

A. State and Federally Enforcable Section (continued)

8. Continuous Compliance Requirements

63.7740 What are my monitoring requirements?

(a) For each capture system subject to an operating limit in 63.7690(b)(1), you must install, operate, and maintain a CPMS according to the requirements in 63.7741(a) and the requirements in paragraphs (a)(1) and (2) of this section.

(1) If you use a flow measurement device to monitor the operating limit parameter, you must at all times monitor the hourly average rate (e.g., the hourly average actual volumetric flow rate through each separately ducted hood or the average hourly total volumetric flow rate at the inlet to the control device).

(2) Dampers that are manually set and remain in the same position are exempt from the requirement to install and operate a CPMS. If dampers are not manually set and remain in the same position, you must make a visual check at least once every 24 hours to verify that each damper for the capture system is in the same position as during the initial performance test.

(b) For each negative pressure baghouse or positive pressure baghouse equipped with a stack that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must at all times monitor the relative change in PM loadings using a bag leak detection system according to the requirements in 63.7741(b) and conduct inspections at their specified frequencies according to the requirements specified in paragraphs (b)(1) through (8) of this section.

(1) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual.

(2) Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.

(3) Check the compressed air supply for pulse-jet baghouses each day.

A. State and Federally Enforcable Section (continued)

(4) Monitor cleaning cycles to ensure proper operation using an appropriate methodology.

(5) Check bag cleaning mechanisms for proper functioning through monthly visual inspection or equivalent means.

(6) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or lying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices.

(7) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.

(8) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

(c) For each wet scrubber subject to the operating limits in 63.7690(b)(2), you must at all times monitor the 3-hour average pressure drop and scrubber water flow rate using CPMS according to the requirements in 63.7741(c).

(d) For each combustion device subject to the operating limit in 63.7690(b)(3), you must at all times monitor the 15-minute average combustion zone temperature using a CPMS according to the requirements of 63.7741(d).

(e) For each combustion device subject to the operating limit in 63.7690(b)(4), you must at all times monitor the 3-hour average combustion zone temperature using CPMS according to the requirements in 63.7741(d).

(f) For each wet acid scrubber subject to the operating limits in 63.7690(b)(5),

(1) You must at all times monitor the 3-hour average scrubbing liquid flow rate using CPMS according to the requirements of 63.7741(e)(1); and

(2) You must at all times monitor the 3-hour average pH of the scrubber blowdown using CPMS according to the requirements in 63.7741(e)(2) or measure and record the pH of the scrubber blowdown once per production cycle using a pH probe and meter according to the requirements in 63.7741(e)(3).

(g) For one or more automated conveyor and pallet cooling lines and automated shakeout lines at a new iron and steel foundry subject to the VOHAP emissions limit in 63.7690(a)(10), you must at all times monitor the 3-hour average VOHAP concentration using a CEMS according to the requirements of 63.7741(g).

63.7741 What are the installation, operation, and maintenance requirements for my monitors?

(a) For each capture system subject to an operating limit in 63.7690(b)(1), you must install, operate, and maintain each CPMS according to the requirements in paragraphs (a)(1) through (3) of this section.

(1) If you use a flow measurement device to monitor an operating limit parameter for a capture system, you must meet the requirements in paragraphs (a)(1)(i) through (iv) of this section.

(i) Locate the flow sensor and other necessary equipment such as straightening vanes in a position that provides a representative flow and that reduces swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(ii) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the flow rate.

(iii) Conduct a flow sensor calibration check at least semiannually.

(iv) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

A. State and Federally Enforcable Section (continued)

(2) If you use a pressure measurement device to monitor the operating limit parameter for a capture system, you must meet the requirements in paragraphs (a)(2)(i) through (vi) of this section.

(i) Locate the pressure sensor(s) in or as close to a position that provides a representative measurement of the pressure and that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(iii) Check the pressure tap for pluggage daily.

(iv) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range, or install a new pressure sensor.

(vi) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(3) Record the results of each inspection, calibration, and validation check.

(b) You must install, operate, and maintain a bag leak detection system according to the requirements in paragraphs (b)(1) through (7) of this section.

(1) The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The bag leak detection system sensor must provide output of relative particulate matter loadings and the owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger).

A. State and Federally Enforcable Section (continued)

(3) The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over the alarm set point established in the operation and maintenance plan, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(4) The initial adjustment of the system must, at minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time (if applicable).

(5) Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set point, or alarm delay time without approval from the Administrator. Except, once per quarter, you may adjust the sensitivity of the bag leak detection system to account for seasonable effects including temperature and humidity according to the procedures in the operation and maintenance plan required by 63.7710(b).

(6) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag leak detector sensor must be installed downstream of the baghouse and upstream of any wet scrubber.

(7) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(c) For each wet scrubber subject to the operating limits in 63.7690(b)(2), you must install and maintain CPMS to measure and record the pressure drop and scrubber water flow rate according to the requirements in paragraphs (c)(1) and (2) of this section.

(1) For each CPMS for pressure drop you must:

(i) Locate the pressure sensor in or as close as possible to a position that provides a representative measurement of the pressure drop and that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.

A. State and Federally Enforcable Section (continued)

(ii) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(iii) Check the pressure tap for pluggage daily.

(iv) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range, or install a new pressure sensor.

(vi) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(2) For each CPMS for scrubber liquid flow rate, you must:

(i) Locate the flow sensor and other necessary equipment in a position that provides a representative flow and that reduces swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(ii) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the flow rate.

(iii) Conduct a flow sensor calibration check at least semiannually according to the manufacturer's instructions.

(iv) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(d) For each combustion device subject to the operating limit in 63.7690(b)(3) or (4), you must install and maintain a CPMS to measure and record the combustion zone temperature according to the requirements in paragraphs (d)(1) through (8) of this section.

(1) Locate the temperature sensor in a position that provides a representative temperature.

(2) For a noncryogenic temperature range, use a temperature sensor with a minimum tolerance of 2.2 C or 0.75 percent of the temperature value, whichever is larger.

A. State and Federally Enforcable Section (continued)

(3) For a cryogenic temperature range, use a temperature sensor with a minimum tolerance of 2.2 C or 2 percent of the temperature value, whichever is larger.

(4) Shield the temperature sensor system from electromagnetic interference and chemical contaminants.

(5) If you use a chart recorder, it must have a sensitivity in the minor division of at least 20 F.

(6) Perform an electronic calibration at least semiannually according to the procedures in the manufacturer's owners manual. Following the electronic calibration, conduct a temperature sensor validation check, in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 16.7 C of the process temperature sensor's reading.

(7) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range, or install a new temperature sensor.

(8) At least monthly, inspect all components for integrity and all electrical connections for continuity, oxidation, and galvanic corrosion.

(e) For each wet acid scrubber subject to the operating limits in 63.7690(b)(5), you must:

(1) Install and maintain CPMS to measure and record the scrubbing liquid flow rate according to the requirements in paragraph (c)(2) of this section; and

(2) Install and maintain CPMS to measure and record the pH of the scrubber blowdown according to the requirements in paragraph (e)(2)(i) through (iv) of this section.

(i) Locate the pH sensor in a position that provides a representative measurement of the pH and that minimizes or eliminates internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.1 pH or a transducer with a minimum measurement sensitivity of 5 percent of the pH range.

(iii) Check gauge calibration quarterly and transducer calibration monthly using a manual pH gauge.

A. State and Federally Enforcable Section (continued)

(iv) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(3) As an alternative to the CPMS required in paragraph (e)(2) of this section, you may use a pH probe to extract a sample for analysis by a pH meter that meets the requirements in paragraphs (e)(3)(i) through (iii) of this section.

(i) The pH meter must have a range of at least 1 to 5 or more;

(ii) The pH meter must have a accuracy of +0.1; and

(iii) The pH meter must have a resolution of at least 0.1 pH.

(f) You must operate each CPMS used to meet the requirements of this subpart according to the requirements specified in paragraphs (f)(1) through (3) of this section.

(1) Each CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of three of the required four data points to constitute a valid hour of data.

(2) Each CPMS must have valid hourly data for 100 percent of every averaging period.

(3) Each CPMS must determine and record the hourly average of all recorded readings and the 3-hour average of all recorded readings.

(g) For each automated conveyor and pallet cooling line and automated shakeout line at a new iron and steel foundry subject to the VOHAP emissions limit in 63.7690(a)(10), you must install, operate, and maintain a CEMS to measure and record the concentration of VOHAP emissions according to the requirements in paragraphs (g)(1) through (3) of this section.

(1) You must install, operate, and maintain each CEMS according to Performance Specification 8 in 40 CFR part 60, appendix B.

(2) You must conduct a performance evaluation of each CEMS according to the requirements of 63.8 and Performance Specification 8 in 40 CFR part 60, appendix B.

A. State and Federally Enforcable Section (continued)

(3) You must operate each CEMS according to the requirements specified in paragraph (g)(3)(i) through (iv) of this section.

(i) As specified in 63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(ii) You must reduce CEMS data as specified in 63.8(g)(2).

(iii) Each CEMS must determine and record the 3-hour average emissions using all the hourly averages collected for periods during which the CEMS is not out-of-control.

(iv) Record the results of each inspection, calibration, and validation check.

63.7742 How do I monitor and collect data to demonstrate continuous compliance?

(a) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect data at all required intervals) any time a source of emissions is operating.

(b) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emissions or operating levels or to fulfill a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing compliance.

(c) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

63.7743 How do I demonstrate continuous compliance with the emissions limitations that apply to me?

(a) You must demonstrate continuous compliance by meeting the applicable conditions in paragraphs (a)(1) through (12) of this section:

A. State and Federally Enforcable Section (continued)

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.005 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0004 gr/dscf.

(2) For each cupola metal melting furnace at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.006 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0005 gr/dscf.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at new iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.002 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0002 gr/dscf.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.001 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.00008 gr/dscf.

(5) For each pouring station at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.010 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0008 gr/dscf.

(6) For each pouring area or pouring station at a new iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.002 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0002 gr/dscf.

A. State and Federally Enforcable Section (continued)

(7) For each building or structure housing any emissions source at the iron and steel foundry, maintaining the opacity of any fugitive emissions discharged to the atmosphere at or below 20 percent opacity (6-minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, maintaining the average VOHAP concentration in the exhaust stream at or below 20 ppmv corrected to 10 percent oxygen.

(9) For each scrap preheater at an existing new iron and steel foundry that does not comply with the work practice standard in 63.7700(e)(1) or (2) and for each scrap preheater at a new iron and steel foundry that does not comply with the work practice standard in 63.7700(f), maintaining the average VOHAP concentration in the exhaust stream at or below 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines or automated shakeout lines that use a sand mold system at a new iron and steel foundry,

(i) Maintaining the 3-hour flow-weighted average VOHAP concentration in the exhaust stream at or below 20 ppmv.

(ii) Inspecting and maintaining each CEMS according to the requirements of 63.7741(g) and recording all information needed to document conformance with these requirements; and

(iv) Collecting and reducing monitoring data for according to the requirements of 63.7741(g) and recording all information needed to document conformance with these requirements.

(11) For each TEA cold box mold or core making line at a new or existing iron and steel foundry, maintaining a 99 percent reduction in the VOHAP concentration in the exhaust stream or maintaining the average VOHAP concentration in the exhaust stream at or below 1 ppmv.

A. State and Federally Enforcable Section (continued)

(11) For each TEA cold box mold or core making line at a new or existing iron and steel foundry, maintaining a 99 percent reduction in the VOHAP concentration in the exhaust stream or maintaining the average VOHAP concentration in the exhaust stream at or below 1 ppmv.

(12) Conducting subsequent performance tests at least every 5 years for each emissions source subject to an emissions limit for PM, total metal HAP, VOHAP, or TEA in 63.7690(a) and subsequent performance tests at least every 6 months for each building or structure subject to the opacity limit in 63.7690(a)(7).

(b) You must demonstrate continuous compliance for each capture system subject to an operating limit in 63.7690(b)(1) by meeting the requirements in paragraphs (b)(1) and (2) of this section.

(1) Operating the capture system at or above the lowest values or settings established for the operating limits in your operation and maintenance plan; and

(2) Monitoring the capture system according to the requirements in 63.7740(a) and collecting, reducing, and recording the monitoring data for each of the operating limit parameters according to the applicable requirements in this subpart.

(b) For each baghouse equipped with a bag leak detection system,

(1) Maintaining records of the times the bag leak detection system alarm sounded, and for each valid alarm, the time you initiated corrective action, the corrective action taken, and the date on which corrective action was completed; and

(2) Inspecting and maintaining each baghouse according to the requirements of 63.7740(b)(1) through (8) and recording all information needed to document conformance with these requirements.

(c) For each wet scrubber that is subject to the operating limits in 63.7690(b)(2), you must demonstrate continuous compliance by:

A. State and Federally Enforcable Section (continued)

(1) Maintaining the 3-hour average pressure drop and 3-hour average scrubber water flow rate at levels no lower than those established during the initial or subsequent performance test;

(2) Inspecting and maintaining each CPMS according to the requirements of 63.7741(c) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for pressure drop and scrubber water flow rate according to the requirements of ?63.7741(f) and recording all information needed to document conformance with these requirements.

(d) For each combustion device that is subject to the operating limit in 63.7690(b)(3), you must demonstrate continuous compliance by:

(1) Maintaining the 15-minute average combustion zone temperature at a level no lower than 1,300 F;

(2) Inspecting and maintaining each CPMS according to the requirements of 63.7741(d) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for combustion zone temperature according to the requirements of 63.7741(f) and recording all information needed to document conformance with these requirements.

(e) For each combustion device that is subject to the operating limit in 63.7690(b)(4), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average combustion zone temperature at a level no lower that established during the initial or subsequent performance test;

(2) Inspecting and maintaining each CPMS according to the requirements of 63.7741(d) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for combustion zone temperature according to the requirements of 63.7741(f) and recording all information needed to document conformance with these requirements.

A. State and Federally Enforcable Section (continued)

(f) For each acid wet scrubber subject to the operating limits in 63.7690(b)(5), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average scrubbing liquid flow rate at a level no lower than the level established during the initial or subsequent performance test;

(2) Maintaining the 3-hour average pH of the scrubber blowdown at a level no higher than 4.5 (if measured by a CPMS) or maintaining the pH level of the scrubber blowdown during each production shift no higher than 4.5;

(3) Inspecting and maintaining each CPMS according to the requirements of 63.7741(e) and recording all information needed to document conformance with these requirements; and

(4) Collecting and reducing monitoring data for scrubbing liquid flow rate and scrubber blowdown pH according to the requirements of 63.7741(f) and recording all information needed to document conformance with these requirements. If the pH level of the scrubber blowdown is measured by a probe and meter, you must demonstrate continuous compliance by maintaining records that document the date, time, and results of each sample taken for each production shift.

63.7744 How do I demonstrate continuous compliance with the work practice standards that apply to me?

(a) You must maintain records that document continuous compliance with the certification requirements in 63.7700(b) or with the procedures in your scrap selection and inspection plan required in 63.7700(c). Your records documenting compliance with the scrap selection and inspection plan must include an copy (kept onsite) of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable.

(b) You must keep records of the chemical composition of all catalyst binder formulations applied in each furan warm box mold or core making line at a new or existing iron and steel foundry to demonstrate continuous compliance with the requirements in 63.7700(d).

(c) For a scrap preheater at an existing iron and steel foundry, you must operate and maintain each gas-fired preheater such that the flame directly contacts the scrap charged to demonstrate continuous compliance with the requirement 63.7700(e)(1). If you choose to meet the work practice standard in 63.7700(e)(2), you must keep records to document that the scrap preheater charges only material that is subject to and in compliance with the scrap certification requirements in 63.7700(b).

(d) For a scrap preheater at a new iron and steel foundry, you must keep records to document that each scrap preheater charges only material that is subject to and in compliance with the scrap certification requirements in 63.7700(b) to demonstrate continuous compliance with the requirement in 63.7700(f).

63.7745 How do I demonstrate continuous compliance with the operation and maintenance requirements that apply to me?

(a) For each capture system and control device for an emissions source subject to an emissions limit in 63.7690(a), you must demonstrate continuous compliance with the operation and maintenance requirements of 63.7710 by:

(1) Making monthly inspections of capture systems and initiating corrective action according to 63.7710(b)(1) and recording all information needed to document conformance with these requirements;

(2) Performing preventative maintenance for each control device according to the preventive maintenance plan required by 63.7710(b)(3) and recording all information needed to document conformance with these requirements;

A. State and Federally Enforcable Section (continued)

(3) Operating and maintaining each bag leak detection system according to the site-specific monitoring plan required by 63.7710(b)(4) and recording all information needed to demonstrate conformance with these requirements;

(3) Initiating and completing corrective action for a bag leak detection system alarm according to the corrective action plan required by 63.7710(b)(5) and recording all information needed to document conformance with these requirements; and

(4) Igniting gases from mold vents according to the procedures in the plan required by 63.7710(b)(6). (Any instance where you fail to follow the procedures is a deviation that must be included in your semiannual compliance report.)

(b) You must maintain a current copy of the operation and maintenance plans required by 63.7710(b) onsite and available for inspection upon request. You must keep the plans for the life of the iron and steel foundry or until the iron and steel foundry is no longer subject to the requirements of this subpart.

63.7746 What other requirements must I meet to demonstrate continuous compliance?

(a) Deviations. You must report each instance in which you did not meet each emissions limitation in 63.7690 (including each operating limit) that applies to you. This requirement includes periods of startup, shutdown, and malfunction. You also must report each instance in which you did not meet each work practice standard in 63.7700 and each operation and maintenance requirement of 63.7710 that applies to you. These instances are deviations from the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart. These deviations must be reported according to the requirements of 63.7751.

(b) Startups, shutdowns, and malfunctions. During periods of startup, shutdown, and malfunction, you must operate in accordance with your startup, shutdown, and malfunction plan.

(1) Consistent with the requirements of 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the startup, shutdown, and malfunction plan.

(2) The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations according to the provisions in 63.6(e).

63.7747 How do I apply for alternative monitoring requirements for a continuous emissions monitoring system?

(a) You may request an alternative monitoring method to demonstrate compliance with the VOHAP emissions limits in 63.7690(a)(10) for automated pallet cooling lines or automated shakeout lines at a new iron and steel foundry according to the procedures in this section.

(b) You can request approval to use an alternative monitoring method in the notification of construction or reconstruction for new sources, or at any time.

(c) You must submit a monitoring plan that includes a description of the control technique or pollution prevention technique, a description of the continuous monitoring system or method including appropriate operating parameters that will be monitored, test results demonstrating compliance with the emissions limit, operating limit(s) (if applicable) determined according to the test results, and the frequency of measuring and recording to establish continuous compliance. If applicable, you must also include operation and maintenance requirements for the monitors.

(d) The monitoring plan is subject to approval by the Administrator. Use of the alternative monitoring method must not begin until approval is granted by the Administrator.

A. State and Federally Enforcable Section (continued)

9. Notifications, Reports, and Records

63.7750 What notifications must I submit and when?

(a) You must submit all of the notifications required by 63.6(h)(4) and (5), 63.7(b) and (c); 63.8(e); 63.8(f)(4) and (6); 63.9(b) through (h) that apply to you by the specified dates.

(b) As specified in 63.9(b)(2), if you start up your iron and steel foundry before [DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must submit your initial notification no later than [120 CALENDAR DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(c) As specified in 63.9(b)(3), if you start up your new iron and steel foundry on or after [DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must submit your initial notification no later than 120 calendar days after you become subject to this subpart.

(d) If you are required to conduct a performance test, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required by 63.7(b)(1).

(e) If you are required to conduct a performance test or other initial compliance demonstration, you must submit a notification of compliance status according to the requirements of 63.9(h)(2)(ii).

(1) For each initial compliance demonstration that does not include a performance test, you must submit the notification of compliance status before the close of business on the 30th calendar day following completion of the initial compliance demonstration.

(2) For each initial compliance demonstration that does include a performance test, you must submit the notification of compliance status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test according to the requirement specified in 63.10(d)(2).

A. State and Federally Enforcable Section (continued)

63.7751 What reports must I submit and when?

(a) Compliance report due dates. Unless the Administrator has approved a different schedule, you must submit a semiannual compliance report to your permitting authority according to the requirements specified in paragraphs (a)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your iron and steel foundry by 63.7683 and ending on June 30 or December 31, whichever date comes first after the compliance date that is specified for your iron and steel foundry.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after your first compliance report is due.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after the end of the semiannual reporting period.

(5) For each iron and steel foundry that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of the dates specified in paragraphs (a)(1) through (4) of this section.

(b) Compliance report contents. Each compliance report must include the information specified in paragraphs (b)(1) through (3) of this section and, as applicable, paragraphs (b)(4) through (8) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a startup, shutdown, or malfunction during the reporting period and you took action consistent with your startup, shutdown, and malfunction plan, the compliance report must include the information in 63.10(d)(5)(i)

(5) If there were no deviations from any emissions limitations (including operating limit), work practice standards, or operation and maintenance requirements, a statement that there were no deviations from the emissions limitations, work practice standards, or operation and maintenance requirements during the reporting period.

(6) If there were no periods during which a continuous monitoring system (including a CPMS or CEMS) was out-of-control as specified by 63.8(c)(7), a statement that there were no periods during which the CPMS was out-of-control during the reporting period.

(7) For each deviation from an emissions limitation (including an operating limit) that occurs at an iron and steel foundry for which you are not using a continuous monitoring system (including a CPMS or CEMS) to comply with an emissions limitation or work practice standard required in this subpart, the compliance report must contain the information specified in paragraphs (b)(1) through (4) and (b)(7)(i) and (ii) of this section. This requirement includes periods of startup, shutdown, and malfunction.

(i) The total operating time of each emissions source during the reporting period.

(ii) Information on the number, duration, and cause of deviations (including unknown cause) as applicable and the corrective action taken.

A. State and Federally Enforcable Section (continued)

(8) For each deviation from an emissions limitation (including an operating limit) or work practice standard occurring at an iron and steel foundry where you are using a continuous monitoring system (including a CPMS or CEMS) to comply with the emissions limitation or work practice standard in this subpart, you must include the information specified in paragraphs (b)(1) through (4) and (b)(8)(i) through (xi) of this section. This requirement includes periods of startup, shutdown, and malfunction.

(i) The date and time that each malfunction started and stopped.

(ii) The date and time that each continuous monitoring system was inoperative, except for zero (low-level) and high-level checks.

(iii) The date, time, and duration that each continuous monitoring system was out-of-control, including the information in 63.8(c)(8).

(iv) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(v) A summary of the total duration of the deviations during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(vi) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and unknown causes.

(vii) A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system downtime as a percent of the total source operating time during the reporting period.

(viii) A brief description of the process units.

(ix) A brief description of the continuous monitoring system.

(x) The date of the latest continuous monitoring system certification or audit.

A. State and Federally Enforcable Section (continued)

(x) The date of the latest continuous monitoring system certification or audit.

(xi) A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.

(c) Immediate startup, shutdown, and malfunction report. If you had a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with your startup, shutdown, and malfunction plan, you must submit an immediate startup, shutdown, and malfunction report according to the requirements of 63.10(d)(5)(ii).

(d) Part 70 monitoring report. If you have obtained a title V operating permit for an iron and steel foundry pursuant to 40 CFR part 70 or 40 CFR part 71, you must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If you submit a compliance report for an iron and steel foundry along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all the required information concerning deviations from any emissions limitation or operation and maintenance requirement in this subpart, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report does not otherwise affect any obligation you may have to report deviations from permit requirements for an iron and steel foundry to your permitting authority.

63.7752 What records must I keep?

(a) You must keep the records specified in paragraphs (a)(1) through (4) of this section:

A. State and Federally Enforcable Section (continued)

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any initial notification or notification of compliance status that you submitted, according to the requirements of 63.10(b)(2)(xiv).

(2) The records specified in 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests and performance evaluations as required by 63.10(b)(2)(viii).

(4) Records of the annual quantity of each chemical binder or coating material used to make molds and cores, the Material Data Safety Sheet or other documentation that provides the chemical composition of each component, and the annual quantity of HAP used at the foundry.

(b) You must keep the following records for each CEMS.

(1) Records described in 63.10(b)(2)(vi) through (xi).

(2) Previous (i.e., superseded) versions of the performance evaluation plan as required in 63.8(d)(3).

(3) Request for alternatives to relative accuracy tests for CEMS as required in 63.8(f)(6)(i).

(4) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(c) You must keep the records required by 63.7743, 63.7744, and 63.7745 to show continuous compliance with each emissions limitation, work practice standard, and operation and maintenance requirement that applies to you.

63.7753 In what form and for how long must I keep my records?

(a) You must keep your records in a form suitable and readily available for expeditious review, according to the requirements of 63.10(b)(1).

(b) As specified in 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record onsite for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to the requirements in 63.10(b)(1). You can keep the records for the previous 3 years offsite.

A. State and Federally Enforcable Section (continued)

10. Other Requirements and Information

63.7760 What parts of the General Provisions apply to me?

Table 1 to this subpart shows which parts of the General Provisions in 63.1 through 63.15 apply to you.

63.7761 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the U.S. Environmental Protection Agency (EPA), or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that cannot be delegated to State, local, or tribal agencies are specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to non-opacity emissions limitations in 63.7690 and work practice standards in 63.7700 under 63.6(g).

(2) Approval of major alternatives to test methods under 63.7(e)(2)(ii) and (f) and as defined in 63.90.

(3) Approval of major alternatives to monitoring under 63.8(f) and as defined in 63.90.

(4) Approval of major alternatives to recordkeeping and reporting under 63.10(f) and as defined in 63.90.

A. State and Federally Enforcable Section (continued)

11. Definitions

63.7765 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA), in 63.2, and in this section.

Automated conveyor and pallet cooling line means any dedicated conveyor line or area used for cooling molds received from pouring stations.

Automated shakeout line means any mechanical process unit designed for and dedicated to separating a casting from a mold. These mechanical processes include, but are not limited to, shaker decks, rotary separators, and high-frequency vibration units. Automated shakeout lines do not include manual processes for separating a casting from a mold, such as personnel using a hammer, chisel, pick ax, sledge hammer, or jackhammer.

Bag leak detection system means a system that is capable of continuously monitoring relative particulate matter (dust) loadings in the exhaust of a baghouse to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, electrodynamic, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

Binder chemical means a component of a system of chemicals used to bind sand together into molds, mold sections, and cores through chemical reaction as opposed to pressure.

Capture system means the collection of components used to capture gases and fumes released from one or more emissions points and then convey the captured gas stream to a control device or to the atmosphere. A capture system may include, but is not limited to, the following components as applicable to a given capture system design: duct intake devices, hoods, enclosures, ductwork, dampers, manifolds, plenums, and fans.

Cold box mold or core making line means a mold or core making line in which the formed aggregate is hardened by catalysis with a gas.

A. State and Federally Enforcable Section (continued)

Combustion device means an afterburner, thermal incinerator, or scrap preheater.

Conveyance means the system of equipment that is designed to capture pollutants at the source, convey them through ductwork, and exhaust them using forced ventilation. A conveyance may, but does not necessarily include, control equipment designed to reduce emissions of the pollutants. Emissions that are released through windows, vents, or other general building ventilation or exhaust systems are not considered to be discharged through a conveyance.

Cooling means the process of molten metal solidification within the mold and subsequent temperature reduction prior to shakeout.

Cupola means a vertical cylindrical shaft furnace that uses coke and forms of iron and steel such as scrap and foundry returns as the primary charge components and melts the iron and steel through combustion of the coke by a forced upward flow of heated air.

Deviation means any instance in which an affected source or an owner or operator of such an affected source:

(1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emissions limitation (including operating limits), work practice standard, or operation and maintenance requirement;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any iron and steel foundry required to obtain such a permit; or

(3) Fails to meet any emissions limitation (including operating limits) or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart.

Electric arc furnace means a vessel in which forms of iron and steel such as scrap and foundry returns are melted through resistance heating by an electric current flowing through the arcs formed between the electrodes and the surface of the metal and also flowing through the metal between the arc paths.

Electric induction furnace means a vessel in which forms of iron and steel such as scrap and foundry returns are melted though resistance heating by an electric current that is induced in the metal by passing an alternating current through a coil surrounding the metal charge or surrounding a pool of molten metal at the bottom of the vessel.

Emissions limitation means any emissions limit or operating limit.

Exhaust stream means gases emitted from a process through a conveyance as defined in this subpart.

Fresh acid solution means a sulfuric acid solution used for the control of triethylamine emissions that has a pH of 2.0 or less.

Fugitive emissions means any pollutant released to the atmosphere that is not discharged through a conveyance as defined in this subpart.

Furan warm box mold or core making line means a mold or core making line in which the binder chemical system used is that system commonly designated furan warm box system by the foundry industry.

Hazardous air pollutant means any substance on the list originally established in 112(b)(1) of the CAA and subsequently amended as published in the Code of Federal Regulations.

Iron and steel foundry means a facility or portion of a facility that melts scrap, ingot, and/or other forms of iron and/or steel and pours the resulting molten metal into molds to produce final or near final shape products for introduction into commerce. Research and development facilities and operations that only produce non-commercial castings are not included in this definition.

A. State and Federally Enforcable Section (continued)

Metal melting furnace means a cupola, electric arc furnace, or electric induction furnace that converts scrap, foundry returns, and/or other solid forms of iron and/or steel to a liquid state. This definition does not include a holding furnace, an argon oxygen decarburization vessel, or ladle that receives molten metal from a metal melting furnace, to which metal ingots or other material may be added to adjust the metal chemistry.

Mold or core making line means the collection of equipment that is used to mix an aggregate of sand and binder chemicals, form the aggregate into final shape, and harden the formed aggregate. This definition does not include a line for making green sand molds or cores.

Mold vent means an intentional opening in a mold through which gases containing pyrolysis products of organic mold and core constituents produced by contact with or proximity to molten metal normally escape the mold during and after metal pouring.

Pouring area means an area, generally associated with floor and pit molding operations, in which molten metal is brought to each individual mold. Pouring areas include all pouring operations that do not meet the definition of a pouring station.

Pouring station means the fixed location to which molds are brought in a continuous or semicontinuous manner to receive molten metal, after which the molds are moved to a cooling area.

Responsible official means responsible official as defined in 63.2.

Scrap preheater means a vessel or other piece of equipment in which metal scrap that is to be used as melting furnace feed is heated to a temperature high enough to eliminate moisture and other volatile impurities or tramp materials by direct flame heating or similar means of heating.

Scrubber blowdown means liquor or slurry discharged from a wet scrubber that is either removed as a waste stream or processed to remove impurities or adjust its composition or pH before being returned to the scrubber.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.

12. The following insignificant emissions units are located at this facility:

F002 - storage piles and yard
P013 - ladle repair plant 2W
P086 - chip & NDT - DEPT 816
P268 - sand blast booth-Pant 1 (PTI 03-542)
P322 - oven batch bowl clean oven (PTI 03-14001)

Each insignificant emissions unit at this facility must comply with all applicable State and federal regulations, and well as any emission limitations and/or control requirements contained within the identified permit to install for the emissions unit. Insignificant emissions units listed above that are not subject to specific permit to install requirements are subject to one or more applicable requirements contained in the federally-approved versions of OAC Chapters 3745-17, 3745-18, and/or 3745-21.

B. State Only Enforceable Section

1. The following insignificant emissions units located at this facility are exempt from permit requirements because they are not subject to any applicable requirements or because they meet the "de minimis" criteria established in OAC rule 3745-15-05:

Z002 - shot reclaimer - Plant 1
Z101- battery charging area
Z102 - small burner throughout the plant
Z103 - maintenance welding activity
Z104 - pattern shop
Z199 - emergency generator - 1 Plant 1
Z200 - emergency generator - 2 Plant 2W
Z201 - emergency generator - 3Plant 2W
Z202 - emergency generator - 4Plant 2E
Z203 - emergency generator - 5
Z204 - emergency generator - 6
Z301 - cooling tower cells - Plant 2
Z302 - lost foam pattern assembly
Z303 - lost foam dip tanks and ovens
Z304 - lost foam sand bins
Z305 - lost foam blast cabinets
Z306 - unleaded gas tank; and
Z307 - diesel tank.

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Boiler # 2 (B002)

Activity Description: Boiler # 2 - Powerhouse

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
44.0 mmBtu/hr, natural gas-fired boiler	OAC rule 3745-17-10 (B)(1)	0.020 lb particulate emissions (PE) per million Btu of actual heat input
	OAC rule 3745-17-07 (A)	Visible PE shall not exceed 20% opacity, as a six-minute average, except as provided by rule.

2. Additional Terms and Conditions

2.a There are no sulfur dioxide emission limitations established by OAC Chapter 3745-18 for this emissions unit because natural gas is the only fuel employed in this emission unit.

II. Operational Restrictions

1. The permittee shall burn only natural gas, as fuel, in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

V. Testing Requirements

1. Compliance with the emission limitations specified in Section A.I.1. of the Terms and Conditions of this permit shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
0.020 lb PE per mmBtu of actual heat input

Applicable Compliance Method:
The permittee shall demonstrate compliance with this emission limitation by multiplying the maximum hourly gas burning capacity of the emissions unit (0.044 mmcu.ft/hr) by the appropriate AP-42, Chapter 1.4-2 (7/98) emission factor for natual gas combustion [1.9 lbs PE (filterable)/mmcu.ft] and then dividing by the maximum hourly heat input capacityof the emissions unit (44.0 mmBtu/hr).

If required, the permittee shall demonstrate compliance with the PE limitation through emission testing performed in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A and the procedures specified in OAC rule 3745-17-03 (B)(9).

1.b Emission Limitation:
Visible PE shall not exceed 20% opacity, as a six-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the VE limitation shall be demonstrated through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Roadways & Parking (F001)

Activity Description: Roadways and Parking Lots (Paved and Unpaved Roads)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
paved roadways and parking areas	OAC rule 3745-17-07 (B)(4)	There shall be no visible particulate emissions (PE), except for a period of 6 minutes during any 60-minute period (See A.I.2.b.)
unpaved roadways and parking areas	OAC rule 3745-17-07 (B)(5)	There shall be no visible PE, except for a period of 13 minutes during any 60-minute period (See A.I.2.c.)
paved and unpaved roadways and parking areas	OAC rule 3745-17-08 (B)	fugitive dust control measures (See A.I.2.c., A.I.2.d., A.I.2.e., A.I.2.f., A.I.2.g., and A.I.2.h.)

2. Additional Terms and Conditions

2.a The paved roadways and parking areas that are covered by this permit and subject to the above-mentioned requirements are listed below:

paved roadways: landfill and general plant roadways
paved parking areas: landfill and general plant parking areas

2.b The unpaved roadways and parking areas that are covered by this permit and subject to the above-mentioned requirements are listed below:

unpaved roadways: settling basins and plant roadways
unpaved parking areas: settling basins and plant parking areas

2.c The permittee shall employ reasonably available control measures on all paved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the paved roadways and parking areas by sweeping, applying a suitable dust suppressant, and speed reduction (vehicular traffic on paved surfaces shall not exceed 15 mph). Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2. Additional Terms and Conditions (continued)

2.d The permittee shall employ reasonably available control measures on all unpaved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the unpaved roadways and parking areas by applying a suitable dust suppressant and speed reduction (vehicular traffic on paved surfaces shall not exceed 15 mph). Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.e The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary for a paved or unpaved roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.

2.f Any unpaved roadway or parking area, which during the term of this permit is paved or takes the characteristics of a paved surface due to the application of certain types of dust suppressants, may be controlled with the control measure(s) specified above for paved surfaces. Any unpaved roadway or parking area that takes the characteristics of a paved roadway or parking area due to the application of certain types of dust suppressants shall remain subject to the visible emission limitation for unpaved roadways and parking areas. Any unpaved roadway or parking area that is paved shall be subject to the visible emission limitation for paved roadways and parking areas.

2.g The permittee shall promptly remove, in such a manner as to minimize or prevent resuspension, earth and/or other material from paved streets onto which such material has been deposited by trucking or earth moving equipment or erosion by water or other means.

2.h Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary for the materials being transported.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. Except as otherwise provided in this section, the permittee shall perform inspections of the roadways and parking areas in accordance with the following frequencies:

paved roadways and parking areas: landfill and general plant roadways and parking
minimum inspection frequency: once during each day of operation

unpaved roadways and parking areas: settling basins and plant roadways and parking
minimum inspection frequency: once during each day of operation

2. The purpose of the inspections is to determine the need for implementing the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.

3. The permittee may, upon receipt of written approval from the appropriate Ohio EPA District Office or local air agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.

III. Monitoring and/or Record Keeping Requirements (continued)

4. The permittee shall maintain records of the following information:

a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;

b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

c. the dates the control measures were implemented; and

d. on a calendar quarter basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

The information required in 4.d. shall be kept separately for (i) the paved roadways and parking areas and (ii) the unpaved roadways and parking areas, and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

IV. Reporting Requirements

1. The permittee shall submit deviation reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify any of the following occurrences:

a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and

b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

V. Testing Requirements

1. Compliance with the emission limitations specified in Section A.I.1. of the Terms and Conditions of this permit shall be determined in accordance with the following methods:

1.a Emission Limitation:
There shall be no visible PE from any paved roadway or parking area except for a period of time not to exceed 3 minutes during any 60-minute period.

Applicable Compliance Method:
If required, compliance with the VE limitation shall be determined through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 22 and the procedures specified in OAC rule 3745-17-03 (B)(1).

1.b Emission Limitation:
There shall be no visible PE from any unpaved roadway or parking area except for a period of time not to exceed 13 minutes during any 60-minute observation period.

Applicable Compliance Method:
If required, compliance with the VE limitation shall be determined through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 22 and the procedures specified in OAC rule 3745-17-03 (B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: LANDFILL MOD (F003)

Activity Description: Foundry Landfill - Residual & Exempt On-site Waste Disposal

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
foundry landfill	OAC rule 3745-17-07 (B)(1)	See A.I.2.e.
	OAC rule 3745-17-08 (B)	See A.I.2.e.
	OAC rule 3745-31-05 (A)(3) (PTI #03-7860, issued 11/1/95)	180 lbs PE/day 34.23 tons PE/year There shall be no visible PE, except for a period of time not to exceed 3 minutes during any 60-minute period (See A.I.2.e.). best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See A.I.2.a., A.I.2.b., and A.I.2.c.)

2. Additional Terms and Conditions

2.a The permittee shall employ best available control measures on all landfill operations for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the sources of fugitive emissions at sufficient treatment frequencies to ensure compliance. The following methods shall be used to minimize fugitive emissions from the landfill operations:

i. minimizing the drop height of landfill wastes from transport vehicles;
ii. applying a suitable dust suppressant to wastes likely to become airborne during dumping operations;
iii. restricting dumping of dusty material during periods of high wind speed (i.e., excess of 25 mph) unless it has a moisture content sufficient to prevent it from becoming airborne;
iv. placing wastes within perimeter berms that shall have exterior surfaces seeded or slagged within 180 days after completion of construction;
v. minimizing the surface area of the "working face";
vi. seeding and/or covering with slag areas of the landfill that have not been worked on for more than 180 days; and
vii. minimizing vehicular traffic on the landfill and restricting it to predetermined routes.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.b The above-mentioned control measure(s) shall be employed for each landfill operation if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measure(s) are necessary to ensure compliance with the above-mentioned applicable requirements. Any required implementation of the control measure(s) shall continue during any such operation until further observation confirms that use of the measure(s) is unnecessary.

2.c The transport vehicles used to deposit wastes in the landfill shall have their exhaust systems constructed so that they do not exhaust directly downward while dumping.

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3475-31-05 (A)(3).

2.e The opacity limitation established in this permit applies to all operations associated with the landfill, except roadways.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. Except as otherwise provided in this section, the permittee shall perform daily inspections of the landfill operations during representative, normal operating hours for each source of fugitive emissions.

2. No inspection shall be necessary for landfill operations covered with snow and/or ice and for any landfill activity if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above identified events shall be performed the next day after such event(s) has (have) ended.

3. The permittee may, upon receipt of written approval from the appropriate Ohio EPA District Office or local air agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.

III. Monitoring and/or Record Keeping Requirements (continued)

4. The permittee shall maintain records of the following information:

a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;

b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

c. the dates the control measures were implemented;

d. on a calendar quarter basis, the total number of days the control measures were implemented; and

e. on a calendar quarter basis, the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measure(s).

The information required in 4.d. and 4.e. shalll be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

IV. Reporting Requirements

1. The permittee shall submit deviation reports in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit that identify any of the following occurrences:

a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and

b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

V. Testing Requirements

1. Compliance with the emission limitations specified in Section A.I.1. of the Terms and Conditions of this permit shall be determined in accordance with the following methods:

1.a Emission Limitation:
There shall be no visible PE, except for a period of time not to exceed 3 minutes during any 60-minute period.

Applicable Compliance Method:
If required, compliance with the visible emission limitation shall be determined through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

1.b Emissions Limitation:
180 lbs PE/day and 34.23 tons PE/year

Applicable Compliance Method:
Compliance with the daily emission limitation may be determined by combining the emissions from wind erosion and material handling operations using calculations from AP-42, Chapter 13.2.4-3, USEPA's "handbook for Dust Control at Hazardous Waste Sites" (pg 4-2), and Ohio EPA's RACM Table 2.18-1, as appropriate.

The permittee may demonstrate compliance with the annual limitation by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hrs/yr and then dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly emission limitation; compliance will also be shown with the annual limitation.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Reclaimer - Exempt (F004)

Activity Description: Metals Separation and Exempt Waste Storage Piles

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
magnetic metal separation and storage	OAC rule 3745-31-05 (A)(3) (PTI #03-10979, issued 2/11/98)	6.57 tons particulate emissions (PE)/yr
screening, conveyor and truck loading - core waste crushing, screening, and truck loading operations	OAC rule 3745-31-05 (A)(3)	opacity restrictions (See A.I.2.b.) best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See A.I.2.d.and A.I.2.e.)
load-in and load-out of storage piles (See A.I.2.f. for identification of storage piles.)	OAC rule 3745-31-05 (A)(3)	opacity restrictions (See A.I.2.b) best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See A.I.2.d.and A.I.2.e.)
wind erosion from storage piles (See A.I.2.f. for identification of storage piles.)	OAC rule 3745-31-05 (A)(3)	Visible PE shall not exceed 0% opacity, except for a period of time not to exceed one minute during any 60-minute period. best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See A.I.2.g.and A.I.2.h.)
	OAC rule 3745-17-07 (B)	See A.I.2.c.
	OAC rule 3745-17-08 (B)	See A.I.2.c.

2. Additional Terms and Conditions

2.a The material handling operation(s) that are covered by this permit and subject to the above-mentioned requirements are listed below:

magnetic metal separation, screening, conveyor and truck loading - core waste crushing, screening, truck loading operations, and load in and load out of the storage piles.

2. Additional Terms and Conditions (continued)

2.b Visible PE shall not exceed the following opacity restrictions:

i. 10% opacity, as a 6-minute average from transfer points on belt conveyors, crushing, screening and magnetic separating operations; and

ii. 20% opacity, as a 3-minute average from truck loading, front end loading, and truck loading and conveyor discharge to storage piles;

2.c The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3475-31-05 (A)(3).

2.d The permittee shall employ best available control measures on all of the material handling operations associated with this emissions unit for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the material handling operations with the following methods in order to ensure compliance:

i. minimizing the drop height between material transfer points; and

ii. applying water as a dust suppressant as needed.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.e The above-mentioned control measure(s) shall be employed for each material handling operation if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measure(s) are necessary to ensure compliance with the above-mentioned applicable requirements. The permittee shall maintain use of the control measures until it is determined they are no longer necessary.

2.f The storage piles that are covered by this permit and subject to the requirements of OAC rule 3745-31-05 (A)(3) are listed below:

storage pile identification:
all metal separation and exempt waste storage piles

2.g The permittee shall employ best available control measures for wind erosion from the surfaces of all storage piles for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to apply water as a dust supressant, as needed, to the storage piles.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.h The above-mentioned control measure(s) shall be employed for wind erosion from each pile if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measure(s) are necessary to ensure compliance with the above-mentioned applicable requirements. Implementation of the control measure(s) shall not be necessary for a storage pile that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain annual records of the total tons of material processed in this emissions unit.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Except as otherwise provided in this section, the permittee shall perform inspections of the material handling operations in accordance with the following minimum frequencies:

material handling operation(s): all magnetic metal separation, screening, conveyor and truck loading - core waste crushing, screening, truck loading operations, and load in and load out of the storage piles..

minimum inspection frequency: daily, during normal operations

3. Visible emissions observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

4. The permittee may, upon receipt of written approval from the appropriate Ohio EPA District Office or local air agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.

5. The permittee shall maintain records of the following information:

a. the date and reason any required inspection was not performed;

b. the date of each inspection where it was determined by the permittee that it was necessary to implement additional control measure(s);

c. the dates the additional control measure(s) was (were) implemented as a result of an inspection conducted in accordance with this permit; and

d. on a calendar quarter basis, the total number of days additional control measure(s) was (were) implemented as a result of an inspection conducted in accordance with this permit.

The information in 5.d. shall be kept separately for each material handling operation identified above, and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

6. No inspection shall be necessary for wind erosion from the surface of a storage pile when the pile is covered with snow and/or ice and for any storage pile activity if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above identified events shall be performed the next day after such event(s) has (have) ended.

7. The permittee may, upon receipt of written approval from the appropriate Ohio EPA District Office or local air agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.

III. Monitoring and/or Record Keeping Requirements (continued)

8. The permittee shall maintain records of the following information:

a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;

b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

c. the dates the control measures were implemented; and

d. on a calendar quarter basis, the total number of days the control measures were implemented and, for wind erosion from pile surfaces, the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measure(s).

The information required in 11.d. shall be kept separately for (i) the load-in operations, (ii) the load-out operations, and (iii) the pile surfaces (wind erosion), and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

IV. Reporting Requirements

1. The permittee shall submit deviation reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify any of the following occurrences for material handling operations:

a. each day during which an inspection was not performed by the required frequency; and

b. each instance when a control measure, that was to be performed as a result of an inspection, was not implemented.

2. The permittee shall submit deviation reports in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit that identify any of the following occurrences:

a. each day during which an inspection of the pile surfaces (wind erosion) was not performed by the required frequency, excluding a storage pile surface inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and

b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

V. Testing Requirements

1. Compliance with the emission limitations specified in Section A.I.1. of the Terms and Conditions of this permit shall be determined in accordance with the following methods:

1.a Emission Limitation:
6.57 tons PE/yr

Applicable Compliance Method:
Compliance with the annual limitation may be determined by summing the PE from the three emissions generating activities: material handling, wind erosion of storage piles, and core waste crushing and screening. PE will be calculated for the material handling operations (including storage pile load-in/out) utilizing AP-42 emission factors, Section 13.2.4 (1/95); for the storage piles (i.e. wind erosion) utilizing U.S. EPA's "Handbook: Dust Control at Hazardous Waste Sites" (EPA/540/2-85/003, 11/85, pg 4-2) and Ohio EPA's RACM Document Table 2.1.2-2 (for silt loading percentages); and for the core waste crushing and screening operations utilizing AP-42 emissions factors, Section 11.19.2 (6/03)."

V. Testing Requirements (continued)

1.b Emission Limitation:
Visible PE shall not exceed 10% opacity, as a 6-minute average from transfer points on belt conveyors, crushing, screening and magnetic separating operations.

Applicable Compliance Method:
If required, compliance with the visible emission limitation shall be determined through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9.

1.c Emission Limitation:
Visible PE shall not exceed 20% opacity, as a 3-minute average from truck loading, front end loading, and conveyor discharge to storage piles.

Applicable Compliance Method:
If required, compliance with the visible emission limitation shall be determined through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9.

1.d Emission Limitation:
Visible PE shall not exceed 0% opacity, except for a period of time not to exceed one minute during any 60-minute period from wind erosion of the storage piles.

Applicable Compliance Method:
If required, compliance with the visible emission limitation shall be determined through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Reclaimer-Nonexempt (F005)

Activity Description: Meagnetic Metal Separation, Screening, Conveyor and Truck Loading - Core Waste Crushing, Screening, and Truck Loading Operations

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
magnetic metal separation and storage	OAC rule 3745-31-05 (A)(3) (PTI #03-10979, issued 2/11/98)	6.57 tons particulate emissions (PE)/yr
screening, conveyor and truck loading - core waste crushing, screening, and truck loading operations	OAC rule 3745-31-05 (A)(3)	opacity restrictions (See A.I.2.b.) best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See A.I.2.d.and A.I.2.e.)
load-in and load-out of storage piles (See A.I.2.f. for identification of storage piles.)	OAC rule 3745-31-05 (A)(3)	opacity restrictions (See A.I.2.b) best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See A.I.2.d.and A.I.2.e.)
wind erosion from storage piles (See A.I.2.f. for identification of storage piles.)	OAC rule 3745-31-05 (A)(3)	Visible PE shall not exceed 0% opacity, except for a period of time not to exceed one minute during any 60-minute period. best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See A.I.2.g.and A.I.2.h.)
	OAC rule 3745-17-07 (B)	See A.I.2.c.
	OAC rule 3745-17-08 (B)	See A.I.2.c.

2. Additional Terms and Conditions

2.a The material handling operation(s) that are covered by this permit and subject to the above-mentioned requirements are listed below:

magnetic metal separation, screening, conveyor and truck loading - core waste crushing, screening, truck loading operations, and load in and load out of the storage piles.

2. Additional Terms and Conditions (continued)

2.b Visible PE shall not exceed the following opacity restrictions:

i. 10% opacity, as a 6-minute average from transfer points on belt conveyors, crushing, screening and magnetic separating operations; and

ii. 20% opacity, as a 3-minute average from truck loading, front end loading, and truck loading and conveyor discharge to storage piles;

2.c The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3475-31-05 (A)(3).

2.d The permittee shall employ best available control measures on all of the material handling operations associated with this emissions unit for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the material handling operations with the following methods in order to ensure compliance:

i. minimizing the drop height between material transfer points; and

ii. applying water as a dust suppressant as needed.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.e The above-mentioned control measure(s) shall be employed for each material handling operation if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measure(s) are necessary to ensure compliance with the above-mentioned applicable requirements. The permittee shall maintain use of the control measures until it is determined they are no longer necessary.

2.f The storage piles that are covered by this permit and subject to the requirements of OAC rule 3745-31-05 (A)(3) are listed below:

storage pile identification:
all metal separation and non exempt waste storage piles

2.g The permittee shall employ best available control measures for wind erosion from the surfaces of all storage piles for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to apply water as a dust supressant, as needed, to the storage piles.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.h The above-mentioned control measure(s) shall be employed for wind erosion from each pile if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measure(s) are necessary to ensure compliance with the above-mentioned applicable requirements. Implementation of the control measure(s) shall not be necessary for a storage pile that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain annual records of the total tons of material processed in this emissions unit.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Except as otherwise provided in this section, the permittee shall perform inspections of the material handling operations in accordance with the following minimum frequencies:

material handling operation(s): all magnetic metal separation, screening, conveyor and truck loading - core waste crushing, screening, truck loading operations, and load in and load out of the storage piles..

minimum inspection frequency: daily, during normal operations

3. Visible emissions observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

4. The permittee may, upon receipt of written approval from the appropriate Ohio EPA District Office or local air agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.

5. The permittee shall maintain records of the following information:

a. the date and reason any required inspection was not performed;

b. the date of each inspection where it was determined by the permittee that it was necessary to implement additional control measure(s);

c. the dates the additional control measure(s) was (were) implemented as a result of an inspection conducted in accordance with this permit; and

d. on a calendar quarter basis, the total number of days additional control measure(s) was (were) implemented as a result of an inspection conducted in accordance with this permit.

The information in 5.d. shall be kept separately for each material handling operation identified above, and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

6. No inspection shall be necessary for wind erosion from the surface of a storage pile when the pile is covered with snow and/or ice and for any storage pile activity if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above identified events shall be performed the next day after such event(s) has (have) ended.

7. The permittee may, upon receipt of written approval from the appropriate Ohio EPA District Office or local air agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.

III. Monitoring and/or Record Keeping Requirements (continued)

8. The permittee shall maintain records of the following information:

a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;

b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

c. the dates the control measures were implemented; and

d. on a calendar quarter basis, the total number of days the control measures were implemented and, for wind erosion from pile surfaces, the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measure(s).

The information required in 11.d. shall be kept separately for (i) the load-in operations, (ii) the load-out operations, and (iii) the pile surfaces (wind erosion), and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

IV. Reporting Requirements

1. The permittee shall submit deviation reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify any of the following occurrences for material handling operations:

a. each day during which an inspection was not performed by the required frequency; and

b. each instance when a control measure, that was to be performed as a result of an inspection, was not implemented.

2. The permittee shall submit deviation reports in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit that identify any of the following occurrences:

a. each day during which an inspection of the pile surfaces (wind erosion) was not performed by the required frequency, excluding a storage pile surface inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and

b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

V. Testing Requirements

1. Compliance with the emission limitations specified in Section A.I.1. of the Terms and Conditions of this permit shall be determined in accordance with the following methods:

1.a Emission Limitation:
6.57 tons PE/yr

Applicable Compliance Method:
Compliance with the annual limitation may be determined by summing the PE from the three emissions generating activities: material handling, wind erosion of storage piles, and core waste crushing and screening. PE will be calculated for the material handling operations (including storage pile load-in/out) utilizing AP-42 emission factors, Section 13.2.4 (1/95); for the storage piles (i.e. wind erosion) utilizing U.S. EPA's "Handbook: Dust Control at Hazardous Waste Sites" (EPA/540/2-85/003, 11/85, pg 4-2) and Ohio EPA's RACM Document Table 2.1.2-2 (for silt loading percentages); and for the core waste crushing and screening operations utilizing AP-42 emissions factors, Section 11.19.2 (6/03)."

V. Testing Requirements (continued)

1.b Emission Limitation:
Visible PE shall not exceed 10% opacity, as a 6-minute average from transfer points on belt conveyors, crushing, screening and magnetic separating operations.

Applicable Compliance Method:
If required, compliance with the visible emission limitation shall be determined through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9.

1.c Emission Limitation:
Visible PE shall not exceed 20% opacity, as a 3-minute average from truck loading, front end loading, and conveyor discharge to storage piles.

Applicable Compliance Method:
If required, compliance with the visible emission limitation shall be determined through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9.

1.d Emission Limitation:
Visible PE shall not exceed 0% opacity, except for a period of time not to exceed one minute during any 60-minute period from wind erosion of the storage piles.

Applicable Compliance Method:
If required, compliance with the visible emission limitation shall be determined through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03 (B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML6 Mold Facilities (P003)

Activity Description: ML6 (Plant 2W) - Mold Facilities

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 mold facilities with 2 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	33.5 lbs particuate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Baghouse: DC-008A; DC-009A

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: F013; F036; F038

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
33.5 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 mold facilities with 2 baghouses		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML6 MOLD S/O & CC (P004)

Activity Description: ML6 (Plant 2W) - Mold Shakeout and Casting Cooling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 mold shakeout & CC with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	22.6 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC- 014A

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: F023; F024; F024A; F025; F025A; F033

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow; and
b. for wet dust collectors, once weekly during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
22.6 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 mold shakeout & CC with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML7 SORT AREA (P006)

Activity Description: ML7 (Plant 2W) - Casting Sort Area

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 sort area with 4 baghouses and 1 impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	33.8 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC-002A

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.02 gr/dscf of exhaust gases, as an average:

Baghouse: DC-028A; DC-028B; DC-028C; DC-028D

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
33.8 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 sort area with 4 baghouses and 1 impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML7 MOLD FACILITIES (P007)

Activity Description: ML7 (Plant 2W) - Mold Facilities

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 mold facilities with 2 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	30.5 lbs particuate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Baghouse: DC-008A; DC-009A

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: F014; F037; F039

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
30.5 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 mold facilities with 2 baghouses		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML7 MOLD COOLING (P008)

Activity Description: ML7 (Plant 2W) - Mold Cooling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 mold cooling	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	57.1 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: F012; F015

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
57.1 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 mold cooling		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML6 MOLD COOLING (P010)

Activity Description: ML6 (Plant 2W) - Mold Cooling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 mold cooling	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	58.2 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: F011A; F016A

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
58.2 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 mold cooling		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML7 IRON POUR (P011)

Activity Description: ML7 (Plant 2W) - RMIP & Rod Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 iron pour with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	46.1 lbs particuate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-029

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: F007; F008; F009

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
46.1 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 iron pour with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML6 IRON POUR (P012)

Activity Description: ML6 (Plant 2W) - RMIP & Rod Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 iron pour with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	46.9 lbs particuate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-027

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: F002; F004; F005

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
46.9 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML7 SAND SYSTEM (P015)

Activity Description: ML7 (Plant 2W) - Mold Sand Mix System

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 sand system with 5 impingement scrubbers	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	50.0 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC-001A; DC-003A; DC-004A

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-005; DC-006
Uncontrolled stack: F035

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow; and
b. for wet dust collectors, once weekly during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
50.0 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML6 SAND SYSTEM (P019)

Activity Description: ML6 (Plant 2W) - Mold Sand and Slurry Mix System

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 sand system with 4 impingement scrubbers and 4 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	50.0 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC-011A; DC-013A; DC-014A

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Baghouse: DC-021; DC-023; DC-024; DC-025
Impingement scrubber: DC-012A
Uncontrolled stack: F034

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
50.0 lbs of PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML6 BLAST CABINET (P020)

Activity Description: ML6 (Plant 2W) - Blast Cabinet

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 blast cabinet with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	39.4 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Cartridge filter: DC-030

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
39.4 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 blast cabinet with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Cupola - #6E (P024)

Activity Description: Cupola #6E (Plant 2W) - Cupola and Iron Troughs

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
60 tons per hour cupola, hot blast heater, iron troughs and electric induction holding furnace (6 east cupola)	OAC rule 3745-17-07(A)	Visible particulate matter from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	47.4 lbs of particulate matter per hour, not including particulate emissions that are fugitive, or are from the hot blast unit.
	OAC rule 3745-17-07(B)	Visible particulate matter from any fugitive dust source shall not exceed 20% opacity, as a three-minute average, except as provided by the rule.
	OAC rule 3745-17-08(B)	reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust
hot blast unit, only	OAC rule 3745-17-10(B)	0.020 lbs of particulate matter per million Btu of actual heat input
cupola, only	OAC rule 3745-18-06(E)	502.3 lbs of sulfur dioxide per hour See A.I.2.c.
	OAC rule 3745-21-08	See A.I.2.d.

2. Additional Terms and Conditions

2.a During cupola furnace charging, a continuous draft shall be maintained through the charge opening during charging sufficient to minimize visible emissions of fugitive dust consistent with good engineering design.

2.b During cupola furnace tapping, the tapping hood shall have a collection sufficient to minimize visible emissions of fugitive dust at the point of capture consistent with good engineering design.

2. Additional Terms and Conditions (continued)

2.c OAC rule 3745-18-06(A) does not establish sulfur dioxide emission limitations for this emissions unit's hot blast operation because it only employs natural gas as fuel. However, OAC rule 3745-18-06(A) requires that the natural gas being combusted meet certain fuel quality restrictions (a heat content greater than 950 Btu per standard cubic foot and a sulfur content less than 0.6 pound per million standard cubic feet). Because the natural gas being burned in this operation is the standard, pipeline quality natural gas supplied to industrial, commercial, and residential users throughout the State, it is assumed that it meets the fuel quality restrictions; and no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance with OAC rule 3745-18-06(A).

2.d OAC rule 3745-21-08(A) is not applicable because the facility is not located in a "Priority 1" county and the emissions unit was installed prior to February 15, 1972.

II. Operational Restrictions

1. The pressure drop across any dry dust collectors associated with this emission unit shall be maintained between 0.5 and 8.0 inches of water, unless otherwise specified in this permit, while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

2. The pressure drop across the venturi scrubber shall be maintained at a value of not less than 50 inches water gauge while the emissions unit is in operation.

3. The venturi scrubber water flow rate shall be maintained at a value of not less than 800 gallons per minute at all times while the emissions unit is in operation.

4. The permittee shall burn only natural gas in the hot blast unit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any abnormal visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow; and

b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If abnormal visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the abnormal visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any abnormal visible emission observation; and
e. any corrective actions taken to minimize or eliminate the abnormal visible emissions.

If abnormal visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the abnormal visible emission observations, or continue the check until the incident has ended. The observer may indicate that the abnormal visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible fugitive emissions from this emissions unit shall be noted in an operations log. If abnormal visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. whether the emissions are representative of normal operations;
c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If abnormal visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall perform checks of the pressure drop across the baghouse(s) associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

5. The permittee shall properly install, operate and maintain equipment to monitor the static pressure drop across the venturi scrubber and the venturi scrubber water flow rate while the emissions unit is in operation. The monitoring and recording devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

a. the pressure drop across the venturi scrubber, inches of water, on a once per operating shift basis;

b. the venturi scrubber water flow rate, in gallons, on a once per operating shift basis; and

c. any time periods when the capture system, control device or monitoring equipment were not working while the emissions unit was in operation.

6. For each day during which the permittee burns a fuel other than natural gas in the hot blast unit, the permittee shall maintain a record of the type of fuel burned.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. for stacks requiring visible emissions checks, identify all days during which any abnormal visible particulate emissions were observed from the stack(s);
b. for stacks requiring visible emissions checks, describe any corrective actions taken to minimize or eliminate the abnormal visible particulate emissions from the stack(s) serving this emissions unit;
c. identify all days during which a pressure drop across the baghouse was outside the range specified in A.II.1, above, along with the identification of the baghouse;
d. describe any corrective actions taken to bring the pressure drop across the baghouse within the range specified in A.II.1;
e. identify all days during which the pressure drop across the venturi scrubber was below the value specified in A.II.2;
f. identify all days during which the pressure drop accross the venturi scrubber was above the value specified in A.II.2;
g. identify all days during which the water flow rate of the venturi scrubber was below the value specified in A.II.3; and
h. identify all days during which the water flow rate of the venturi scrubber was above the value specified in A.II.3.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible fugitive particulate emissions were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the abnormal visible fugitive particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirements:

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted on the main cupola stack to demonstrate compliance with the allowable mass emission rate for PE and SO2.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate:

PE, Methods 1-5 of 40 CFR Part 60, Appendix A; and

SO2, Methods 1-4 and 6 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 47.4 lbs PE/hr, not including emissions from the hot blast unit

Applicable Compliance Method: The emissions unit is vented to several stacks with only the main cupola stack being required to perform an emissions test. The permittee shall demonstrate compliance with the hourly allowable PE limitation above by combining the results of emission testing conducted in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix; with the following formula for the remaining stacks:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

3.b Emission Limitation: 502.3 lbs SO2/hr

Applicable Compliance Method: The only significant source of SO2 emissions are from the main cupola stack. Therefore, compliance with the lbs/hr limitation shall be determined through the testing conducted on the main cupola stack in accordance with Methods 1-4 and 6 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

3.c Emission Limitation: 0.020 lb PE/mmBtu of actual heat input from the hot blast unit

Applicable Compliance Method: The permittee may determine compliance with this limitation by multiplying the maximum hourly natural gas consumption rate (mm cu. ft/hr) by the emission factor from AP-42, Table 1.4-2 (revised 7/98) of 1.9 lbs PE (filterable)/mm cu. ft, and then dividing by the maximum heat input capacity of the hot blast unit (38.5 mmBtu/hr).

If required, compliance with the PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(9).

3.d Emission Limitation: For all stacks associated with this emissions unit, visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

Applicable Compliance Method: If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

3.e Emission Limitation: For fugitive emissions associated with this emissions unit, visible PE shall not exceed 20% opacity, as a 3-minute average, except as provided by the rule.

Applicable Compliance Method: If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: 6E & 6W SLAGGING (P027)

Activity Description: Cupola #6E & #6W (Plant 2W) - Slag removal & quench

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
6E & 6W slagging		Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	53.1 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: F001; M016

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
53.1 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
6E & 6W slagging		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML2 SAND SYSTEM (P088)

Activity Description: ML2 (Plant 1) - Mold Sand Mix System

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML2 sand system with 3 impingement scrubbers	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	46.3 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber - DC-062; DC-063; DC-068

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
46.3 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML2 sand system with 3 impingement scrubbers		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML2 S/O & CC (P089)

Activity Description: ML2 (Plant 1) - Mold Shakeout and Casting Cooling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML2 shakeout & CC with 2 impingement scrubbers and 2 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	50.0 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC-065A

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Baghouse: DC-034B; DC-064A
Impingement scrubber: DC-068
Uncontrolled stack: 416; 417; 427; 434; 436; 498; 499; 741; 742

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
50.0 lbs of PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML2 shakeout & CC with 2 impingement scrubbers and 2 baghouses		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML2 MOLD COOLING (P090)

Activity Description: ML2 (Plant 1) - Mold Cooling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML2 mold cooling with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	6.8 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company has agreed will be limited to 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-068
Uncontrolled stack: 438; 454; 500; 502; 504; 509; 512

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
6.8 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML2 mold cooling with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML2 MOLD FACILITIES (P095)

Activity Description: ML2 (Plant 1) - Molding Facilities

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML2 mold facilities	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	46.3 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects to achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 453; 488; 492; 494; 495; 508

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
46.3 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 mold cooling		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN4 BLAST CABINET #5 (P098)

Activity Description: FN4 (Plant 1) - No. 5 Blast cabinet

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 blast cabinet 5 with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	Consent Order No. 98 CV 33718 dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-011B

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 blast cabinet 5 with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR6 OVEN - CORE DRY (P122)

Activity Description: CR6 (Plant 1) - Core Proc & Dry Oven H.B.

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven #13	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 1.20 lbs OC/hr, 1.00 tons OC/year 0.39 lbs PE/hr, 0.27 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 1.20 lbs OC/hr, 1.00 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4110 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 6724 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 0.39 lbs PE/hr, 0.27 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4110 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 6724 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN4 GRINDER NE 5 B/C (P127)

Activity Description: FN4 (Plant 1) - Grinder NE of #5 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 grinder (NE 5 B/C) with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	11.0 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Cartridge filter: DC-011B

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
11.0 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 grinder (NE 5 B/C) with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML3 MOLD FACILITIES (P141)

Activity Description: ML3 (Plant 1) - Molding Facilities - This source was separated into P439 for 95 TV application.

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 mold facilities	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	53.2 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 377

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
53.2 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 mold cooling		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML3 MOLD COOLING (P142)

Activity Description: ML3 (Plant 1) - Mold Cooling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 mold cooling with 4 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	35.4 lbs particuate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Baghouse: DC-079; DC-087: DC-088; DC-089

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 308; 309

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
35.4 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 mold cooling with 4 baghouses		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML3 SAND SYSTEM (P149)

Activity Description: ML3 (Plant 1) - Mold Sand Mix System

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 sand system with 2 impingement scrubbers	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	45.0 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber - DC-060; DC-066

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
45.0 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 sand system with 2 impingement scrubbers		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML3 SPRUE HANDLING (P154)

Activity Description: ML3 (Plant 1) - Casting Separation, Shakeout & Sprue Handling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 sprue handling with 2 impingement scrubbers and 2 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	40.0 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Baghouse: DC-088; DC-089

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects to achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-025; DC-061

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
40.0 lbs of PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 sprue handling with 2 impingement scrubbers and 2 baghouses		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN4 BLAST CABINET #6 (P161)

Activity Description: FN4 (Plant 1) - No. 6 Blast Cabinet

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 blast cabinet 6 with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	11.4 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC- 048A

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
11.4 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 blast cabinet 6 with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML7 S/O & CC (P164)

Activity Description: ML7 (Plant 2W) - Mold Shakeout and Casting Cooling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 shakeout & CC with 3 impingement scrubbers and 1 cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	43.7 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-029
Impingement scrubber: DC-001A; DC-002A; DC-017

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: F027; F029; F032; F040; M008; M011; M012

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
43.7 lbs of PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CUPOLA - #6W (P165)

Activity Description: Cupola #6W (Plant 2W) - Cupola and Iron Troughs

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
60 tons per hour cupola, hot blast heater, iron troughs and electric induction holding furnace (6 west cupola)	OAC rule 3745-17-07(A)	Visible particulate matter from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	48.6 lbs of particulate matter per hour, not including particulate emissions that are fugitive, or are from the hot blast unit.
	OAC rule 3745-17-07(B)	Visible particulate matter from any fugitive dust source shall not exceed 20% opacity, as a three-minute average, except as provided by the rule.
	OAC rule 3745-17-08(B)	reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust
hot blast unit, only	OAC rule 3745-17-10(B)	0.020 lbs of particulate matter per million Btu of actual heat input
cupola, only	OAC rule 3745-18-06(E)	547.3 lbs of sulfur dioxide per hour See A.I.2.c.
	OAC rule 3745-21-08	See A.I.2.d.

2. Additional Terms and Conditions

2.a During cupola furnace charging, a continuous draft shall be maintained through the charge opening during charging sufficient to minimize visible emissions of fugitive dust consistent with good engineering design.

2.b During cupola furnace tapping, the tapping hood shall have a collection sufficient to minimize visible emissions of fugitive dust at the point of capture consistent with good engineering design.

2. Additional Terms and Conditions (continued)

2.c OAC rule 3745-18-06(A) does not establish sulfur dioxide emission limitations for this emissions unit's hot blast operation because it only employs natural gas as fuel. However, OAC rule 3745-18-06(A) requires that the natural gas being combusted meet certain fuel quality restrictions (a heat content greater than 950 Btu per standard cubic foot and a sulfur content less than 0.6 pound per million standard cubic feet). Because the natural gas being burned in this operation is the standard, pipeline quality natural gas supplied to industrial, commercial, and residential users throughout the State, it is assumed that it meets the fuel quality restrictions; and no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance with OAC rule 3745-18-06(A).

2.d OAC rule 3745-21-08(A) is not applicable because the facility is not located in a "Priority 1" county and the emissions unit was installed prior to February 15, 1972.

II. Operational Restrictions

1. The pressure drop across any dry dust collectors associated with this emissions unit shall be maintained between 0.5 and 8.0 inches of water, unless otherwise specified in this permit, while the emissions unit is in operation to ensure compliance with the pound per hour emission limit

2. The pressure drop across the venturi scrubber shall be maintained at a value of not less than 50 inches water gauge while the emissions unit is in operation.

3. The venturi scrubber water flow rate shall be maintained at a value of not less than 800 gallons per minute at all times while the emissions unit is in operation.

4. The permittee shall burn only natural gas in the hot blast unit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any abnormal visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow; and

b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If abnormal visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the abnormal visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any abnormal visible emission observation; and
e. any corrective actions taken to minimize or eliminate the abnormal visible emissions.

If abnormal visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the abnormal visible emission observations, or continue the check until the incident has ended. The observer may indicate that the abnormal visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible fugitive emissions from this emissions unit shall be noted in an operations log. If abnormal visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. whether the emissions are representative of normal operations;
c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If abnormal visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall perform checks of the pressure drop across the baghouse(s) associated with this emissions unit once every two weeks that the emissions unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

5. The permittee shall properly install, operate and maintain equipment to monitor the static pressure drop across the venturi scrubber and the venturi scrubber water flow rate while the emissions unit is in operation. The monitoring and recording devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

a. the pressure drop across the venturi scrubber, inches of water, on a once per operating shift basis;

b. the venturi scrubber water flow rate, in gallons, on a once per operating shift basis; and

c. any time periods when the capture system, control device or monitoring equipment were not working while the emissions unit was in operation.

6. For each day during which the permittee burns a fuel other than natural gas in the hot blast unit, the permittee shall maintain a record of the type of fuel burned.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. for stacks requiring visible emissions checks, identify all days during which any abnormal visible particulate emissions were observed from the stack(s);
b. for stacks requiring visible emissions checks, describe any corrective actions taken to minimize or eliminate the abnormal visible particulate emissions from the stack(s) serving this emissions unit;
c. identify all days during which a pressure drop across the baghouse was outside the range specified in A.II.1, above, along with the identification of the baghouse;
d. describe any corrective actions taken to bring the pressure drop across the baghouse within the range specified in A.II.1;
e. identify all days during which the pressure drop across the venturi scrubber was below the value specified in A.II.2;
f. identify all days during which the pressure drop accross the venturi scrubber was above the value specified in A.II.2;
g. identify all days during which the water flow rate of the venturi scrubber was below the value specified in A.II.3; and
h. identify all days during which the water flow rate of the venturi scrubber was above the value specified in A.II.3.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible fugitive particulate emissions were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the abnormal visible fugitive particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirements:

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted on the main cupola stack to demonstrate compliance with the allowable mass emission rate for PE and SO2.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate:

PE, Methods 1-5 of 40 CFR Part 60, Appendix A; and

SO2, Methods 1-4 and 6 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 48.6 lbs PE/hr, not including emissions from the hot blast unit

Applicable Compliance Method: The emissions unit is vented to several stacks with only the main cupola stack being required to perform an emissions test. The permittee shall demonstrate compliance with the hourly allowable PE limitation above by combining the results of emission testing conducted in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix; with the following formula for the remaining stacks:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

3.b Emission Limitation: 547.3 lbs SO2/hr

Applicable Compliance Method: The only significant source of SO2 emissions are from the main cupola stack. Therefore, compliance with the lbs/hr limitation shall be determined through the testing conducted on the main cupola stack in accordance with Methods 1-4 and 6 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

3.c Emission Limitation: 0.020 lb PE/mmBtu of actual heat input from the hot blast unit

Applicable Compliance Method: The permittee may determine compliance with this limitation by multiplying the maximum hourly natural gas consumption rate (mm cu. ft/hr) by the emission factor from AP-42, Table 1.4-2 (revised 7/98) of 1.9 lbs PE (filterable)/mm cu. ft, and then dividing by the maximum heat input capacity of the hot blast unit (38.5 mmBtu/hr).

If required, compliance with the PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(9).

3.d Emission Limitation: For all stacks associated with this emissions unit, visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

Applicable Compliance Method: If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

3.e Emission Limitation: For fugitive emissions associated with this emissions unit, visible PE shall not exceed 20% opacity, as a 3-minute average, except as provided by the rule.

Applicable Compliance Method: If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CHARGE MAKE-UP -Plt2 (P167)

Activity Description: Cupola #6E & #6W (Plant 2W) - Charge Makeup

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
charge make-up #6 with impingement scrubber and cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	46.9 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-022

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company has agreed will also be limited to 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-018

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
46.9 lbs of PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If required to stack test, new calculations based upon the results of the emissions testing, along with the calculated emissions from all stacks associated with this emissions unit, will then need to be made to confirm compliance with the PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If required to stack test, new calculations based upon the results of the emissions testing, along with the calculated emissions from all stacks associated with this emissions unit, will then need to be made to confirm compliance with the PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CHARGE MAKE-UP - #3 (P168)

Activity Description: Cupola #3 (Plant 1) - Charge Makeup

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
charge make-up #3	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	47.0 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company has agreed will be limited to 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 577; 578; 579

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow; and
b. for wet dust collectors, once weekly during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
47.0 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If required to stack test, new calculations based upon the results of the emissions testing, along with the calculated emissions from all stacks associated with this emissions unit, will then need to be made to confirm compliance with the PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML1 MOLD COOLING (P173)

Activity Description: ML1 (Plant 1) - Mold Cooling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML1 mold cooling with 1 cartridge filter and 4 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	43.8 lbs particuate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-080
Baghouse: DC-086; DC-088: DC-089; DC-090

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company has agreed will also be limited to 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 554

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
43.8 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If required to stack test, new calculations based upon the results of the emissions testing, along with the calculated emissions from all stacks associated with this emissions unit, will then need to be made to confirm compliance with the PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If required to stack test, new calculations based upon the results of the emissions testing, along with the calculated emissions from all stacks associated with this emissions unit, will then need to be made to confirm compliance with the PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML1 S/O & CC (P174)

Activity Description: ML1 (Plant 1) - Mold Shakeout and Casting Cooling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML1 shakeout & CC with 2 impingement scrubbers and 4 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	50.0 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Baghouse: DC-057A; DC-069A; DC-071A; DC-072A

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-037A; DC-058
Uncontrolled stack: 008; 439; 518A; 519A; 520A; 558A; 829; 830

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
50.0 lbs of PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML1 SAND SYSTEM (P180)

Activity Description: ML1 (Plant 1) - Mold Sand Mix System

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML1 sand system with 4 impingement scrubbers and 2 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	50.0 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Baghouse: DC-034B

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Baghouse: DC-090
Impingement scrubber: DC-035A; DC-036A; DC-037A; DC-038
Uncontrolled stack: 615; 622

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
50.0 lbs of PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #16-17 (P184)

Activity Description: CR6 (Plant 1) - Core Hot Box #16-17

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine # 16/17 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 49.20 lbs OC/hr, 42.31 tons OC/year (includes conveyor emissions) 5.80 lbs PE/hr, 3.67 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 49.20 lbs OC/hr, 42.31 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 9600 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 24,000 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 5.80 lbs PE/hr, 3.67 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 9600 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 24,000 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CUPOLA - #4 (P188)

Activity Description: Cupola #4 (Plant 1) - Cupola and Iron Troughs

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
80 tons per hour recuperative cupola, iron troughs and electric induction holding furnace (4 cupola)	OAC rule 3745-17-07(A)	Visible particulate matter from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	51.0 lbs of particulate matter per hour, not including particulate emissions that are fugitive.
	OAC rule 3745-17-07(B)	Visible particulate matter from any fugitive dust source shall not exceed 20% opacity, as a three-minute average, except as provided by the rule.
	OAC rule 3745-17-08(B)	reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust See section A.I.2.a. and A.I.2.b.
cupola, only	OAC rule 3745-18-06(E)	644.7 lbs of sulfur dioxide per hour
	OAC rule 3745-21-08	See A.I.2.c.
	OAC rule 3745-31-05 (PTI #03-277)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A), 3745-17-07(B), 3745-17-11(B) and 3745-18-06(E). See A.I.2.d.

2. Additional Terms and Conditions

2.a During cupola furnace charging, a continuous draft shall be maintained through the charge opening during charging sufficient to minimize visible emissions of fugitive dust consistent with good engineering design.

2. Additional Terms and Conditions (continued)

2.b During cupola furnace tapping, the tapping hood shall have a collection sufficient to minimize visible emissions of fugitive dust at the point of capture consistent with good engineering design.

2.c The temperature in the Dwell Chamber shall be maintained at or above 1300 degrees Fahrenheit for 0.3 seconds or greater.

2.d The requirements established pursuant to this rule are equivalent to the requirements of OAC rules 3745-17-07(A), 3745-17-07(B), 3745-17-08(B), 3745-17-11(B), and 3745-18-06(E).

II. Operational Restrictions

1. The pressure drop across any dry dust collectors associated with this emission unit shall be maintained between 0.5 and 8.0 inches of water, unless otherwise specified in this permit, while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

2. The pressure drop across the venturi scrubber shall be maintained at a value of not less than 58 inches water gauge while the emissions unit is in operation.

3. The venturi scrubber water flow rate shall be maintained at a value of not less than 800 gallons per minute at all times while the emissions unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any abnormal visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow; and

b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If abnormal visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the abnormal visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any abnormal visible emission observation; and
e. any corrective actions taken to minimize or eliminate the abnormal visible emissions.

If abnormal visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the abnormal visible emission observations, or continue the check until the incident has ended. The observer may indicate that the abnormal visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible fugitive emissions, from this emissions unit, shall be noted in an operations log. If abnormal visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. whether the emissions are representative of normal operations;
c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If abnormal visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall perform checks of the pressure drop across the baghouse(s) associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

5. The permittee shall properly install, operate and maintain equipment to monitor the static pressure drop across the venturi scrubber and the venturi scrubber water flow rate while the emissions unit is in operation. The monitoring and recording devices shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

a. the pressure drop across the venturi scrubber, inches of water, on a once per operating shift basis;

b. the venturi scrubber water flow rate, in gallons, on a once per operating shift basis; and

c. any time periods when the capture system, control device or monitoring equipment were not working while the emissions unit was in operation.

III. Monitoring and/or Record Keeping Requirements (continued)

6. The permittee shall operate and maintain a temperature monitor and recorder which measures and records the combustion temperature within the dwell chamber when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modification deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

a. All 3-hour blocks of time during which the average combustion temperature within the dwell chamber, when the emissions unit was in operation, was below 1,300 degrees.

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. for stacks requiring visible emissions checks, identify all days during which any abnormal visible particulate emissions were observed from the stack(s);
b. for stacks requiring visible emissions checks, describe any corrective actions taken to minimize or eliminate the abnormal visible particulate emissions from the stack(s) serving this emissions unit;
c. identify all days during which a pressure drop across the baghouse was outside the range specified in A.II.1, above, along with the identification of the baghouse;
d. describe any corrective actions taken to bring the pressure drop across the baghouse within the range specified in A.II.1;
e. identify all days during which the pressure drop across the venturi scrubber was below the value specified in A.II.2;
f. identify all days during which the pressure drop accross the venturi scrubber was above the value specified in A.II.2;
g. identify all days during which the water flow rate of the venturi scrubber was below the value specified in A.II.3; and
h. identify all days during which the water flow rate of the venturi scrubber was above the value specified in A.II.3.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible fugitive particulate emissions were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible fugitive particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall submit deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within the dwell chember does not comply with the temperature limitation specified above.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirements:

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted on the main cupola stacks (stacks 708 and 709) to demonstrate compliance with the allowable mass emission rate for PE and SO2.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate:

PE, Methods 1-5 of 40 CFR Part 60, Appendix A; and

SO2, Methods 1-4 and 6 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 51.0 lbs PE/hr, not including emissions from the hot blast unit

Applicable Compliance Method: The emissions unit is vented to several stacks with only the main cupola stacks (stacks 708 and 709) being required to perform an emissions test. The permittee shall demonstrate compliance with the hourly allowable PE limitation above by combining the results of emission testing conducted in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix; with the following formula for the remaining stacks:

V. Testing Requirements (continued)

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

3.b Emission Limitation: 644.7 lbs SO2/hr

Applicable Compliance Method: The only significant source of SO2 emissions are from the main cupola stacks (stacks 708 and 709). Therefore, compliance with the lbs/hr limitation shall be determined through the testing conducted on the main cupola stack in accordance with Methods 1-4 and 6 of 40 CFR, Part 60, Appendix A.

3.c Emission Limitation: For all stacks associated with this emissions unit, visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

Applicable Compliance Method: If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

3.d Emission Limitation: For all fugitive emissions associated with this emissions unit, visible PE shall not exceed 20% opacity, as a 3-minute average, except as provided by the rule.

Applicable Compliance Method: If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FURN - #4 AJAX (P189)

Activity Description: Ajax #4 (Plant 1) - Electric Induction Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
furnace #4 (Ajax) with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	54.7 lbs particuate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-302)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-080

2.c This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 695; 696; 879

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:
54.7 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FURN - #5 AJAX (P190)

Activity Description: Ajax #5 (Plant 1) - Electric Induction Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
furnace #5 (Ajax) with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	54.7 lbs particuate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-302)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-083

2.c This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 456; 664; 665; 782; 880; 948

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:
54.7 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
furnace #5 (Ajax) with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN1 BLAST CABINET #3 (P196)

Activity Description: FN1 (Plant 1) - No. 3 Blast Cabinet

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 blast cabinet 3 with 2 impingement scrubbers	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	21.9 lbs particulate emissions (PE)/yr
	OAC Rule 3745-31-05 (PTI #03-302, issued 12/19/75)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC-014A

2.c This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC- 047

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
21.9 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: DESULFURIZATION - 6W (P197)

Activity Description: Cupola #6W (Plant 2W) - Desulfurization Station

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
desulfurization (6W) with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	17.3 lbs particuate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-295)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.
	OAC rule 3745-18-06(E)	xx lbs SO2/hr

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC-019A

2.c This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: M032

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
17.3 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

V. Testing Requirements (continued)

1.d Emission Limitation:
xx lbs SO2/hr

Applicable Compliance Method:
If required, compliance with the lbs/hr limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
desulfurization (6W) with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN7 S/O HEAD DUMP (P202)

Activity Description: FN7 (Plant 1) - Shaker/Head Dump

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN7 shakeout head dump with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	18.8 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-302, issued 12/19/75)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b This emissions unit is controlled by the follwoing dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-053

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
18.8 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN7 S/O HEAD SORT (P203)

Activity Description: FN7 (Plant 1) - Shaker/Head Sort

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN7 shakeout head sort with 2 impingement scrubbers	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	18.8 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-302, issued 12/19/75)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b This emissions unit is controlled by the follwoing dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-052; DC-053

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
18.8 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SLURRY SYSTEM (P207)

Activity Description: (Plant 1) - Mold Sand Slurry System

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
slurry system with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	14.6 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-318, issued 12/19/75)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-044A

2.c This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 233

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitations:
14.6 lbs of PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML2 IRON POUR (P208)

Activity Description: ML2 (Plant 1) - RMIP & Rod Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML2 iron pour	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	42.4 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-322)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 522; 524; 707

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
42.4 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CHARGE MAKE-UP - #4 (P209)

Activity Description: Cupola #4 (Plant 1) - Charge Makeup

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
charge make-up #4 with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	28.4 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-322)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company has agreed will be limited to 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-042

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow; and
b. for wet dust collectors, once weekly during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
28.4 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If required to stack test, new calculations based upon the results of the emissions testing, along with the calculated emissions from all stacks associated with this emissions unit, will then need to be made to confirm compliance with the PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: DESULFURIZATION - 6E (P210)

Activity Description: Cupola #6E (Plant 2W) - Desulfurization Station

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
desulfurization (6E) with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.
	OAC rule 3745-18-06(E)	xx lbs SO2/hr

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998 .

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC- 014A

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

1.c Emission Limitation:
xx lbs SO2/hr

Applicable Compliance Method:
If required, compliance with the lbs/hr limitation shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR3 OVEN - W HB34-35 (P211)

Activity Description: CR3 (Plant 1) - Core Curing Oven W of HB 34-35

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven #14	OAC rule 3745-31-05(A)(3)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.21 lbs OC/hr, 5.96 tons OC/year 2.31 lbs PE/hr, 1.59 tons PE/yr 0.80 lb carbon monoxide (CO)/hr, 1.31 tons CO/yr 0.95 lb nitrogen oxide (NOx)/hr, 1.56 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.21 lbs OC/hr, 5.96 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 24,600 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 40,244 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.31 lbs PE/hr, 1.59 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 24,600 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 40,244 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.80 lb CO/hr, 1.31 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9545 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.23 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.95 lb NOx/hr, 1.56 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9545 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.23 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #18-#19 (P212)

Activity Description: CR6 (Plant 1) - Core Hot Box #18-19

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no. 18/19 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 36.90 lbs OC/hr, 31.73 tons OC/year (includes conveyor emissions) 4.35 lbs PE/hr, 2.75 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 36.90 lbs OC/hr, 31.73 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 4.35 lbs PE/hr, 2.75 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #20-#21 (P213)

Activity Description: CR6 (Plant 1) - Core Hot Box #20-21

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no. 20/21 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 36.90 lbs OC/hr, 31.73 tons OC/year (includes conveyor emissions) 4.35 lbs PE/hr, 2.75 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 36.90 lbs OC/hr, 31.73 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 4.35 lbs PE/hr, 2.75 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN6 GRINDER N 11 B/C (P215)

Activity Description: FN6 (Plant 1) - Grinder N of #11 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN6 (N 11 B/C) with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	5.9 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-107)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.a.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC- 048A

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
5.9 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN6 (N 11 B/C) with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML6 SORT AREA (P216)

Activity Description: ML6 (Plant 2W) - Casting Sort Area

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 sort area with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	17.7 lbs particulate emissions (PE)/hr

2. Additional Terms and Conditions

2.a This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company has agreed will be limited to 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-020

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow;
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
17.7 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML6 sort area with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: BLAST CABINET - LQA (P223)

Activity Description: (Plant 1) - Blast Cabinet LQA W of ML2

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
LQA (W of ML2) blast cabinet with baghouse	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	Consent Order No. 98 CV 33718 dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Baghouse: DC-064A

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
LQA (W of ML2) blast cabinet with baghouse		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR6 OVEN - #1 CORE (P233)

Activity Description: CR6 (Plant 1) - Core Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven #1	OAC rule 3745-31-05(A)(3)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 11.25 lbs OC/hr, 9.30 tons OC/year 3.61 lbs PE/hr, 2.49 tons PE/yr 1.25 lb carbon monoxide (CO)/hr, 2.05 tons CO/yr 1.49 lb nitrogen oxide (NOx)/hr, 2.44 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 11.25 lbs OC/hr, 9.30 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 38,400 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 62,820 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 3.61 lbs PE/hr, 2.49 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 38,400 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 62,820 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 1.25 lb CO/hr, 2.05 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 14,899 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 48.75 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 1.49 lbs NOx/hr, 2.44 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 14,899 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 48.75 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN4 SHAKER - N 5 B/C (P235)

Activity Description: FN4 (Plant 1) - Shaker N of #5 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 shaker (N 5 B/C) with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-657, issued 12/19/75)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.b.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.c.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.c As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-011B

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 shaker (N 5 B/C) with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN1 GRINDER - E 3 BC (P236)

Activity Description: FN1 (Plant 1) - Block Grinder E of #3 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 grinder (E 3 B/C) with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-658, issued 9/25/78)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.b.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.c.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation estabished pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.c As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC-014A

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 grinder (E 3 B/C) with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN4 SHAKER - N 6 B/C (P237)

Activity Description: FN4 (Plant 1) - Shaker N of #6 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 shaker (N 6 B/C) with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	5.5 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-401, issued 9/16/76)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company has agreed will be limited to 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-048A

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
5.5 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 shaker (N 6 B/C) with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML3 S/O & CC (P248)

Activity Description: ML3 (Plant 1) - Mold Shakeout and Casting Cooling

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 shakeout & CC with 3 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	43.7 lbs particulate emissions (PE)/hr
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.a.

2. Additional Terms and Conditions

2.a As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Baghouse: DC-067A; DC-079; DC-087

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 118; 159; 316; 318; 321; 379

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.a above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
43.7 lbs of PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 shakeout & CC with 3 baghouses		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN5 BLAST CABINET #7 (P253)

Activity Description: FN5 (Plant 1) - No. 7 Blast Cabinet

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 blast cabinet 7 with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC Rule 3745-31-05(A)(3) (PTI #03-656, issued 8/11/78)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.b.
	Consent Order No. 98 CV 33718 dated July 10, 1998	See A.I.2.c.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.c As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-013A

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.c above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 blast cabinet 7 with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN5 SHAKER - N 7 B/C (P254)

Activity Description: FN5 (Plant 1) - Shaker N of #7 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 shaker (N 7 B/C) with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-657, issued 9/25/78)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-013A

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 shaker (N 7 B/C) with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN5 GRINDER - N 7 BC (P255)

Activity Description: FN5 (Plant 1) - Grinder N of #7 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 grinder (N 7 B/C) with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	9.1 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-658, issued 9/25/78)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.I.2.a.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Cartridge filter: DC-011B

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
9.1 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 grinder (NE 5 B/C) with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN5 BLAST CABINET #8 (P256)

Activity Description: FN5 (Plant 1) - No. 8 Blast Cabinet

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 blast cabinet 8 with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC Rule 3745-31-05(A)(3) (PTI #03-659, issued 8/11/78)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.a.
	Consent Order No. 98 CV 33718 dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-013A

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 blast cabinet 8 with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN5 SHAKER - N 8 B/C (P257)

Activity Description: FN5 (Plant 1) - Shaker N of #8 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 shaker (N 8 B/C) with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-660, issued 8/11/78)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-013A

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 shaker (N 8 B/C) with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML3 IRON POUR (P264)

Activity Description: ML3 (Plant 1) - RMIP and Rod Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 iron pour with 2 baghouses	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	46.4 lbs particuate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-500, issued 5/2/77)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Baghouse: DC-088; DC-089

2.c This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 384; 385; 386; 389; 394; 396; 473; 474

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:
46.4 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML3 iron pour with 2 baghouses		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FURN - #3 AJAX (P265)

Activity Description: Ajax #3 (Plant 1) - Electric Induction Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
funace #3 (Ajax)	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	54.7 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-501, issued 5/2/77)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 781; 881; 882; 883; 884; 885; 886

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
54.7 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
funace #3 (Ajax)		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SLAGGING-ML7 (P269)

Activity Description: ML7 (Plant 2W) - Slag Removal Station

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 slagging	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	46.1 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-555)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.I.2.a.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: M046

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
46.1 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML7 slagging		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML1 IRON POUR (P271)

Activity Description: ML1 (Plant 1) - RMIP and Rod Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML1 iron pour with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	46.1 lbs particuate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-572)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-080

2.c This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: 563A; 564A; 701

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:
46.1 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML1 iron pour with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: ML1 MOLD FACILITIES (P273)

Activity Description: ML1 (Plant 1) - Mold Facilites

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML1 mold facilities with baghouse and impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	32.3 lbs particuate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-572)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Baghouse: DC-057A

2.c This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-056

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation:
32.3 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
ML1 mold facilities with baghouse and impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND DEL SYS (P274)

Activity Description: (Plant 1) - Core Sand Delivery System

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand delivery system with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	12.5 lbs particulate emissions (PE)/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-579, issued 9/28/77)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B). See A.1.2.a.

2. Additional Terms and Conditions

2.a No emission limitations, control requirements, or operational restrictions were established pursuant to OAC rule 3745-31-05(A)(3) for this emissions unit.

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects to achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-059

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collector, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
12.5 lbs PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand delivery system with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: BLAST CABINET - #3 (P284)

Activity Description: ML7 (Plant 2W) - No. 3 Blast Cabinet

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
blast cabinet 3 with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC Rule 3745-31-05(A)(3) (PTI #03-820, issued 7/1/80)	10.0 lbs particulate emissions (PE)/hr 19.2 tons PE/yr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Cartridge filter: DC-030

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a 10.0 lbs PE/hr and 19.2 tons PE/yr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

The permittee may demonstrate compliance with the annual PE limitation by multiplying the hourly PE limitation by the maximum operating schedule 8760 hrs/yr, and then dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance shall also be shown with the annual limitation.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
blast cabinet 3 with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN6 BLAST CABINET 11 (P289)

Activity Description: FN6 (Plant 1) - No. 11 Blast Cabinet

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN6 blast cabinet 11 with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC Rule 3745-31-05(A)(3) (PTI #03-820, issued 7/1/80)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.a.
	Consent Order No. 98 CV 33718 dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-005B

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN6 blast cabinet 11 with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #38-39 (P292)

Activity Description: CR3 - (Plant 1) - Core Hot Box #38-39

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no. 38/39 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 29.73 lbs OC/hr, 25.56 tons OC/year (includes conveyor emissions) 3.50 lbs PE/hr, 2.22 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR3 OVEN - #2 CORE (P297)

Activity Description: CR3 (Plant 1) - Inline Core Drying Oven - S of P211

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
dip oven no. 2	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.21 lbs OC/hr, 5.96 tons OC/year 2.31 lbs PE/hr, 1.59 tons PE/yr 0.80 lb carbon monoxide (CO)/hr, 1.31 tons CO/yr 0.95 lb nitrogen oxide (NOx)/hr, 1.56 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.21 lbs OC/hr, 5.96 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 24,600 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 40,244 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.31 lbs PE/hr, 1.59 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 24,600 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 40,244 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.80 lb CO/hr, 1.31 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9545 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.23 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.95 lb NOx/hr, 1.56 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9545 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.23 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #47-48 (P298)

Activity Description: CR6 (Plant 1) - Core Hot Box #47-48

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no. 47/48 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 36.90 lbs OC/hr, 31.73 tons OC/year (includes conveyor emissions) 4.35 lbs PE/hr, 2.75 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 36.90 lbs OC/hr, 31.73 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 4.35 lbs PE/hr, 2.75 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #49-50 (P299)

Activity Description: CR6 (Plant 1) - Core Hot Box #49-50

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box machine no. 49/50 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 36.90 lbs OC/hr, 31.73 tons OC/year (includes conveyor emissions) 4.35 lbs PE/hr, 2.75 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 36.90 lbs OC/hr, 31.73 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 4.35 lbs PE/hr, 2.75 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN6 SHAKER N 11 B/C (P300)

Activity Description: FN6 (Plant 1) - Shaker N of #11 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 shaker (N 11 B/C) with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-1871, issued 11/15/84)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-005B

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 shaker (N 11 B/C) with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN6 SHAKER NE 11 B/C (P301)

Activity Description: FN6 (Plant 1) - Shaker NE of #11 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 shaker (NE 11 B/C) with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-1871, issued 11/15/84)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.a.
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-005B

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN5 shaker (NE 11 B/C) with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR1 CB CORE MACH #60 (P302)

Activity Description: CR1 (Plant 1) - Core Cold Box #60

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no. 60 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 5.36 lbs OC/hr, 4.93 tons OC/year 1.12 lbs PE/hr, 1.01 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN1 SHAKER S 3 B/C (P311)

Activity Description: FN1 (Plant 1) - Shaker S of #3 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 shaker (S 3 B/C) with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-2285, issued 11/6/85)	0.25 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3) and the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998 .

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC-014A

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.25 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 shaker (S 3 B/C) with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CUPOLA - #3 (P318)

Activity Description: Cupola #3 (Plant 1) - Cupola and Iron Troughs

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
Plant 1 No. 3 Plasma arc/conventional cupola (includes 30 mm Btu/hr natural gas fired hot blast unit) with after burner and venturi scrubber	OAC rule 3745-31-05(A)(3) (PTI # 03-14054)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D), OAC rule 3745-17-07(A), OAC rule 3745-21-08(D), and OAC rule 3745-23-06(B). Cupola emissions: 495.4 lbs carbon monoxide (CO)/hr 23.7 lbs nitrogen oxide (NOx)/hr 21.2 lbs sulfur dioxide (SO2)/hr 17.7 lbs particulate emissions (PE)/hr (See A.I.2.e) 0.38 lbs lead (Pb)/hr 7.4 lbs organic compounds (OC)/hr, 15.9 tons OC/yr control requirements (See A.I.2.f) Hot Blast emissions: 3.0 lbs NOx/hr 2.5 lb CO/hr 0.23 lb PE/hr
	OAC rule 3745-31-05(D)	rolling, 12-month emission limitations (See A.I.2.b)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a six-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-18-06(E)	See A.I.2.a.
	OAC rule 3745-21-08(D)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.c.
	OAC rule 3745-17-10(B)(1)	See A.I.2.a.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b The permittee has requested the following federally enforceable emission limitations for purposes of avoiding Prevention of Significant (PSD) applicablility:

i. for cupola;
a. 1065.1 tons CO per rolling 12-month period
b. 50.7 tons NOx per rolling 12-month period
c. 45.7 tons SO2 per rolling 12-month period
d. 38.1 tons PE per rolling 12-month period
e. 0.82 tons Pb per rolling 12-month period

ii. for hot blast unit;
a. 7.5 tons CO per rolling 12-month period
b. 9.0 tons NOx per rolling 12-month period
c. 0.69 tons PE per rolling 12-month period

The federally enforceable limitations are based on the hours of operation input restriction for the cupola specified in A.II.1 and natural gas usage input restriction for the hot blast unit specified in A.II.2.

2.c The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.d CO gases emitted during the operation of the grey iron cupola shall be burned at 1300 degrees Fahrenheit for 0.3 seconds or greater in the direct-flame afterburner or equivalent device equipped with an indicating pyrometer which is positioned in the working area at the operator's eye level.

2.e The PE limitations are inclusive of and assumed to be PM10.

2.f Best available technology (BAT) control requirements for this emissions unit has been determined to be a control system consisting of a direct-flame afterburner and wetcap, followed by a venturi scrubber. The control system shall achieve a maximum outlet concentration of 0.03 gr/dscf for PE.

II. Operational Restrictions

1. The maximum annual operating hours for this emissions unit shall not exceed 4300 for the cupola, based upon a rolling, 12-month summation of the operating hours. This is an existing emissions unit, and for purposes of demonstrating compliance during the first 12-months of operation, the permittee shall use existing records verified by the Ohio EPA field office.

II. Operational Restrictions (continued)

2. The maximum annual natural gas usage for hot blast unit shall not exceed 180.0 mmCf/yr, based upon a rolling 12-month summation of natural gas usage.

To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the natural gas usage levels specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mmCf)
1	15.0
1-2	30.0
1-3	45.0
1-4	60.0
1-5	75.0
1-6	90.0
1-7	105.0
1-8	120.0
1-9	135.0
1-10	150.0
1-11	165.0
1-12	180.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual natural gas usage shall be based upon a rolling 12-month summation of the natural gas usage.

3. The pressure drop across the venturi scrubber shall be maintained at a value of not less than 58 inches water gauge while the emissions unit is in operation.

4. The venturi scrubber water flow rate shall be maintained at a value of not less than 800 gallons per minute (gpm) at all times while the emissions unit is in operation.

5. The permittee shall burn only natural gas in the hot blast unit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the venturi scrubber and the venturi scrubber water flow rate while the emissions unit is in operation. The monitoring devices and any records shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across the venturi scrubber, inches of water, on a once per shift basis; and

b. the venturi scrubber water flow rate, in gpm, on a once per shift basis.

III. Monitoring and/or Record Keeping Requirements (continued)

2. The permittee shall maintain monthly records of the following information:

a. the operating hours for each month, for the cupola;

b. the rolling, 12-month summation of the operating hours, for the cupola;

c. the quantity of natural gas combusted in the hot blast unit, in mmCf;

d. for the first 12 months of operation under the provisions of this permit, the cumulative monthly natural gas usage, in mmCf, for the hot blast unit;

e. after the first 12 months of operation under the provisions of this permit, the annual natural gas usage, in mmCf, based on a rolling, 12-month summation of the monthly natural gas usage, for the hot blast unit;

f. the emission rate, in tons/month for each of the following:

i. for the cupola; CO, NOx, SO2, PE and Pb; and
ii. for the hot blast unit; CO, NOx and PE.

the emission rate shall be calculated by multiplying the maximum lb/hr emission rate for each pollutant by the monthly operating hours for the cupola and natural gas usage for the hot blast unit; and

g. the rolling, 12-month summation of the emission rates for:

i. for the cupola; CO, NOx, SO2, PE, and Pb; and
ii. for the hot blast unit; CO, NOx, and PE.

3. The permittee shall operate and maintain a temperature monitor and recorder which measures and records the combustion temperature within the direct-flame afterburner when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modification deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

a. All 3-hour blocks of time during which the average combustion temperature within the direct-flame afterburner, when the emissions unit was in operation, was below 1,300 degrees.

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

4. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in the hot blast unit.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all recorded periods of times during which the following venturi scrubber parameters were not maintained at or above the required levels:

a. the static pressure drop across the venturi scrubber; and
b. the venturi scrubber water flow rate.

IV. Reporting Requirements (continued)

2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the following for the cupola:

a. 12-month rolling operating hours restriction; and
b. the rolling, 12-month emission limitations for CO, NOx, SO2, PE, and Pb.

3. The permittee shall submit deviation (excursion) reports which identify all exceedances of any of the following for the hot blast unit:

a. for the first 12 calendar months of operation under the provisions of this permit, all exceedance of the allowable cumulative natural gas usage; and

b. after the first 12 calendar months of operation under the provisions of this permit, the annual natural gas usage restrictions and the rolling, 12-month emission limitations for CO, NOx and PE.

4. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in the hot blast unit. Each report shall be submitted within 30 days after the deviation occurs.

5. The permittee shall submit deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within the direct-flame afterburner does not comply with the temperature limitation specified above.

6. Deviation (excursion) reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

1.a Emission Limitation: 495.4 lbs CO/hr, 1065.1 lbs CO per rolling 12-month period (cupola)

Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly emission limitation based upon the results of the stack test specified in paragraph A.V.2 of the terms and conditions of this permit.

The permittee shall demonstrate compliance with the rolling 12-month limitation by the record keeping requirements in paragraph A.III.2

1.b Emission Limitation: 23.6 lbs NOx/hr, 50.7 tons NOx per rolling 12-month period (cupola)

Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly emission limitation based upon the results of the stack test specified in paragraph A.V.2 of the terms and conditions of this permit.

The permittee shall demonstrate compliance with the rolling 12-month limitation by the record keeping requirements in paragraph A.III.2

1.c Emission Limitation: 21.2 lbs SO2/hr, 45.6 tons SO2 per rolling 12-month period (cupola)

Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly emission limitation based upon the results of the stack test specified in paragraph A.V.2 of the terms and conditions of this permit.

The permittee shall demonstrate compliance with the rolling 12-month limitation by the record keeping requirements in paragraph A.III.2

V. Testing Requirements (continued)

1.d Emission Limitation: 17.7 lbs PE/hr, 38.1 tons PE per rolling 12-month period (cupola)

Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly emission limitation based upon the results of the stack test specified in paragraph A.V.2 of the terms and conditions of this permit.

The permittee shall demonstrate compliance with the rolling 12-month limitation by the record keeping requirements in paragraph A.III.2

1.e Emission Limitation: 0.38 lbs Pb/hr, 0.82 tons Pb per rolling 12-month period (cupola)

Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly emission limitation based upon the results of the stack test specified in paragraph A.V.2 of the terms and conditions of this permit.

The permittee shall demonstrate compliance with the rolling 12-month limitation by the record keeping requirements in paragraph A.III.2

1.f Emission Limitation: 7.4 lbs OC/hr, 16.7 tons OC/yr (cupola)

Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly emission limitation based upon the results of the stack test specified in paragraph A.V.2 of the terms and conditions of this permit.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 4500 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation and the maximum hours of operation, compliance will also be shown with the annual limitation will be assumed.

1.g Emission Limitation: 2.5 lbs CO/hr, 7.5 tons CO per rolling 12-month period (hot blast)

Applicable Compliance Method: The permittee may determine compliance with the hourly allowable CO emission limitation by multiplying the maximum hourly natural gas consumption rate (mm cu. ft/hr) by the emission factor from AP-42, Table 1.4-1 (revised 7/98) of 84 lbs CO/mm cu. ft. If required, compliance with the hourly allowable COemission limitation above shall be determined in accordance with Methods 1 through 4 and 10 of 40 CFR, Part 60, Appendix A.

The permittee shall demonstrate compliance with the rolling 12-month limitation by the record keeping requirements in paragraph A.III.2

1.h Emission Limitations: 3.0 lbs NOx/hr, 9.0 tons NOx per rolling 12-month period (hot blast)

Applicable Compliance Method: The permittee may determine compliance with the hourly allowable NOx emission limitation by multiplying the maximum hourly natural gas consumption rate (mm cu. ft/hr) by the emission factor from AP-42, Table 1.4-1 (revised 7/98) of 100 lbs NOx/mm cu. ft. If required, compliance with the hourly allowable NOx emission limitation above shall be determined in accordance with Methods 1 through 4 and 7 of 40 CFR, Part 60, Appendix A.

The permittee shall demonstrate compliance with the rolling 12-month limitation by the record keeping requirements in paragraph A.III.2

V. Testing Requirements (continued)

1.i Emission Limitation: 0.23 lb PE/hr, 0.69 tons PE per rolling 12-month period (hot blast)

Applicable Compliance Method: The permittee may determine compliance with the hourly allowable PE emission limitation by multiplying the maximum hourly natural gas consumption rate (mm cu. ft/hr) by the emission factor from AP-42, Table 1.4-1 (revised 7/98) of 7.6 lbs PE/mm cu. ft. If required, compliance with the hourly allowable PE limitation above shall be determined in accordance with Methods 1 through 4 and 5 of 40 CFR, Part 60, Appendix A.

The permittee shall demonstrate compliance with the rolling 12-month limitation by the record keeping requirements in paragraph A.III.2

1.j Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

2. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements:

2.a The emissions testing shall be conducted within 6 months after issuance of the PTI. If the emissions unit is not operating in a production capacity during this time period, testing will be required within 90 days after the emissions unit has achieved a production level which would allow for three test runs (each one hour minimum in duration) to be performed in accordance with the methods specified in section A.V.2.c

2.b The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for CO, PE, NOx, SO2, OC and Pb from the cupola. The testing shall also be conducted to demonstrate compliance with the maximum outlet concentration of 0.03 gr PE/dscf from the cupola.

2.c The following test method shall be employed to demonstrate compliance with the allowable mass emission rate:

CO, Methods 1-4 and 10 of 40 CFR Part 60, Appendix A;

PE, Methods 1-5 of 40 CFR Part 60, Appendix A;

NOx, Methods 1-4 and 7 of 40 CFR Part 60, Appendix A;

SO2, Methods 1-4 and 6 of 40 CFR Part 60, Appendix A;

OC, Methods 1-4 and 18, 25, and/or 25A of 40 CFR Part 60, Appendix A; and

Pb, Methods 1-4 and 12 of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

2.d The test shall be conducted while the emissions unit is operating at normal production, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR5 OVEN - #3 CORE (P320)

Activity Description: CR5 (Plant 1) - Core Wash Dry Oven - @ CB 68, 69-70

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven no. 3	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.74 lbs OC/hr, 6.39 tons OC/year 2.48 lbs PE/hr, 1.71 tons PE/yr 0.86 lb carbon monoxide (CO)/hr, 1.41 tons CO/yr 1.02 lbs nitrogen oxide (NOx)/hr, 1.68 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.74 lbs OC/hr, 6.39 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,400 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 43,189 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.48 lbs PE/hr, 1.71 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,400 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 43,189 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.86 lb CO/hr, 1.41 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 10,243 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 33.51 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 1.02 lbs NOx/hr, 1.68 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 10,243 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 33.51 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH #66-67 (P321)

Activity Description: CR5 (Plant 1) - Core Cold Box #66-67

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no. 66/67 (two station machine) and sand core mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 5.95 lbs OC/hr, 5.48 tons OC/year 1.25 lbs PE/hr, 1.13 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 5.95 lbs OC/hr, 5.48 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7000 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 17,500 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.25 lbs PE/hr, 1.13 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7000 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 17,500 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #71-72 (P323)

Activity Description: CR8 (Plant 1) - Core Hot Box #71-72

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.71/72 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions) 8.70 lbs PE/hr, 5.51 tons PE/yr 0.43 lbs carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lbs nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

III. Monitoring and/or Record Keeping Requirements (continued)

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

III. Monitoring and/or Record Keeping Requirements (continued)

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

1.f Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #73-74 (P324)

Activity Description: CR8 (Plant 1) - Core Hot Box #73-74

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no. 73/74 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions) 8.70 lbs PE/hr, 5.51 tons PE/yr 0.43 lbs carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lbs nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

III. Monitoring and/or Record Keeping Requirements (continued)

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

III. Monitoring and/or Record Keeping Requirements (continued)

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

1.f Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #75-76 (P325)

Activity Description: CR8 (Plant 1) - Core Hot Box #75-76

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no. 75/76 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions) 8.70 lbs PE/hr, 5.51 tons PE/yr 0.43 lbs carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lbs nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

III. Monitoring and/or Record Keeping Requirements (continued)

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

III. Monitoring and/or Record Keeping Requirements (continued)

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

1.f Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 OVEN DRY #1 FECO (P329)

Activity Description: CR8 (Plant 1) - FECO Line #1 Core Dip Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven FECO line no. 1	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxide (NOx)/hr, 1.60 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 OVEN DRY #2 FECO (P330)

Activity Description: CR8 (Plant 1) - FECO Line #2 Core Dip Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven FECO line no. 2	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxide (NOx)/hr, 1.60 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 OVEN DRY #3 FECO (P331)

Activity Description: CR8 (Plant 1) - FECO Line #3 Core Dip Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven FECO line no. 3	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxide (NOx)/hr, 1.60 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 OVEN DRY #4 FECO (P332)

Activity Description: CR8 (Plant 1) - FECO Line #4 Core Dip Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven FECO line no. 4	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxide (NOx)/hr, 1.60 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 V COOLER #1FECO (P333)

Activity Description: CR8 (Plant 1) - FECO Line #1 Vertical Core Cooler

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
vertical cooler - FECO line no.1	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

III. Monitoring and/or Record Keeping Requirements (continued)

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 V COOLER #2FECO (P334)

Activity Description: CR8 (Plant 1) - FECO Line #2 Vertical Core Cooler

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
vertical cooler - FECO line no.2	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

III. Monitoring and/or Record Keeping Requirements (continued)

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 V COOLER #3FECO (P335)

Activity Description: CR8 (Plant 1) - FECO Line #3 Vertical Core Cooler

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
vertical cooler - FECO line no.3	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 14.77 lbs OC/hr, 12.20 tons OC/year 4.74 lbs PE/hr, 3.27 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

III. Monitoring and/or Record Keeping Requirements (continued)

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 14.77 lbs OC/hr, 12.20 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 50,400 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 82,451 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 4.74 lbs PE/hr, 3.27 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 50,400 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 82,451 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 V COOLER #4FECO (P336)

Activity Description: CR8 (Plant 1) - FECO Line #4 Vertical Core Cooler

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
vertical cooler - FECO line no.4	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.70 lbs OC/hr, 6.36 tons OC/year 2.47 lbs PE/hr, 1.70 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

III. Monitoring and/or Record Keeping Requirements (continued)

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.70 lbs OC/hr, 6.36 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,280 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 42,992 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 2.47 lbs PE/hr, 1.70 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,280 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 42,992 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 OVEN PSTE 1 FECO (P337)

Activity Description: CR8 (Plant 1) - FECO Line #1 Core Paste Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
paste dry oven FECO line no.1	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxide (NOx)/hr, 1.60 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 OVEN PSTE 2 FECO (P338)

Activity Description: CR8 (Plant 1) - FECO Line #2 Core Paste Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
paste dry oven FECO line no. 2	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxide (NOx)/hr, 1.60 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 OVEN PSTE 3 FECO (P339)

Activity Description: CR8 (Plant 1) - FECO Line #3 Core Paste Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
paste dry oven FECO line no. 3	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxide (NOx)/hr, 1.60 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 OVEN PSTE 4 FECO (P340)

Activity Description: CR8 (Plant 1) - FECO Line #4 Core Paste Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
paste dry oven FECO line no. 4	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxide (NOx)/hr, 1.60 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FURN - 130 TON (P349)

Activity Description: 130 Ton Furnace (Plant 2W) - Electric Induction Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
130 TPH electric induction furnace	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-6869, issued 6/3/93)	1.36 lbs particulate emissions (PE)/hr 5.96 tons PE/yr

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company has agreed will be limited to 0.020 gr/dscf of exhaust gases, as an average:

Uncontrolled stack: M002

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow; and
b. for wet dust collectors, once weekly during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

III. Monitoring and/or Record Keeping Requirements (continued)

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
1.36 lbs PE/hr and 5.96 tons/yr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If required to stack test, new calculations based upon the results of the emissions testing, along with the calculated emissions from all stacks associated with this emissions unit, will then need to be made to confirm compliance with the PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

The annual PE limitation was calculated by multiplying the hourly PE limitation by 8760 hrs/yr, and then dividing by 2000 lbs/ton.

1.b Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
130 TPH electric induction furnace		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR11 OVEN - #4 CORE (P352)

Activity Description: CR11 (Plant 1) - Core Dip Drying Oven (3.4 L bulk)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven no.4 (block dip dry oven no.1)	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 1.85 lbs OC/hr, 1.53 tons OC/year 0.59 lbs PE/hr, 0.41 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 1.85 lbs OC/hr, 1.53 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 10,306 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 0.59 lbs PE/hr, 0.41 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 10,306 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #77-78 (P353)

Activity Description: CR8 (Plant 1) - Core Hot Box #77-78

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.77/78 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions) 8.70 lbs PE/hr, 5.51 tons PE/yr 0.43 lbs carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lbs nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

III. Monitoring and/or Record Keeping Requirements (continued)

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

III. Monitoring and/or Record Keeping Requirements (continued)

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

1.f Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #79-80 (P354)

Activity Description: CR8 (Plant 1) - Core Hot Box #79-80

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.79/80 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions) 8.70 lbs PE/hr, 5.51 tons PE/yr 0.43 lbs carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lbs nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

III. Monitoring and/or Record Keeping Requirements (continued)

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

III. Monitoring and/or Record Keeping Requirements (continued)

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

1.f Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #81-82 (P355)

Activity Description: CR8 (Plant 1) - Core Hot Box #81-82

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.81/82 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions) 8.70 lbs PE/hr, 5.51 tons PE/yr 0.43 lbs carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lbs nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

III. Monitoring and/or Record Keeping Requirements (continued)

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

III. Monitoring and/or Record Keeping Requirements (continued)

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

1.f Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #83-84 (P356)

Activity Description: CR8 (Plant 1) - Core Hot Box #83-84

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.83/84 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions) 8.70 lbs PE/hr, 5.51 tons PE/yr 0.43 lbs carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lbs nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

III. Monitoring and/or Record Keeping Requirements (continued)

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

III. Monitoring and/or Record Keeping Requirements (continued)

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

1.f Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5155 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 25.78 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH #69-70 (P358)

Activity Description: CR5 (Plant 1) - Core Cold Box #69-70

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.69/70 (two station machine) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.93 lbs OC/hr, 7.30 tons OC/year (see A.I.2.c) 6.02 lbs PE/hr, 4.18 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.93 lbs OC/hr, 7.30 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7700 lbs/hr by an emission factor of 0.00085 lb OC/lb sand for the main stack and 0.00018 lb OC/lb sand for miscellaneous exhaust stack #836. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 19,250 tons/yr by an emission factor of 0.000313 ton OC/ton of sand for the main stack and 0.0000665 ton OC/ton of sand for miscellaneous exhaust stack #836.

1.e Emission Limitation: 6.02 lbs PE/hr, 4.18 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7700 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand for the main stack and 0.000604 lb PE/lb sand for miscellaneous stack #836. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 19,250 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand for the main stack and 0.000153 lb PE/lb sand for miscellaneous stack #836.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN4 GRINDER V6 BLOCK (P360)

Activity Description: FN4 (Plant 1) - Grinder V6 Blk NW of #5 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 grinder V6 block with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-7169, issued 7/14/93)	0.73 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-048A

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.73 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN4 grinder V6 block with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR11 OVEN - #5 CORE (P361)

Activity Description: CR11 (Plant 1) - Shell Core Wash Oven - Shell Dip - "Toyota"

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven no.5	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 2.49 lbs OC/hr, 2.06 tons OC/year 0.80 lbs PE/hr, 0.55 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 2.49 lbs OC/hr, 2.06 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 8500 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 13,905 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 0.80 lbs PE/hr, 0.55 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 8500 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 13,905 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND DEL SYS #75 (P363)

Activity Description: (Plant 1) - Sand Del Sys Pneu#75

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand delivery system #75 with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-7239, issued 7/28/93)	0.36 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Cartridge filter: DC-076A

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.36 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand delivery system #75 with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND DEL SYS #100 (P364)

Activity Description: (Plant 1) - Sand Del Sys Pneu#100

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand delivery system #100 with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-7239, issued 7/28/93)	0.62 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3)

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Cartridge filter: DC-078

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.62 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand delivery system #100 with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND DEL SYS #900A (P365)

Activity Description: (Plant 1) - Sand Del Sys Pneu#900A

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand delivery system #900A with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-7239, issued 7/28/93)	0.52 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Cartridge filter: DC-077A

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.52 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand delivery system #900A with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN1 SHAKER N #3 B/C (P366)

Activity Description: FN1 (Plant 1) - Shaker 6.2L N of #3 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 shaker (N 3 B/C) with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-7198, issued 7/21/93)	0.25 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-047

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.25 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 shaker (N 3 B/C) with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN1 GRINDER 6.2L HD (P367)

Activity Description: FN1 (Plant 1) - Grinder 6.2L Head SW of #3 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 grinder (6.2L HD) with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-7217, issued 10/27/93)	0.72 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3) and the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998 .

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC- 014A

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.72 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 grinder (6.2L HD) with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN1 GRINDER 4.3&5.0L (P368)

Activity Description: FN1 (Plant 1) - Grinder 4.3L & 5.0L Hd Mid #3 B/C

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 grinder (4.3L and 5.0L HD) with impingement scrubber	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-7217, issued 10/27/93)	0.72 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3) and the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998 .

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Impingement scrubber: DC- 014A

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack; and
b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.72 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN1 grinder (4.3L and 5.0 HD) with impingement scrubber		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR5 CB CORE MACH #68 (P369)

Activity Description: CR5 (Plant 1) - Core Cold Box #68

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.68 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 4.02 lbs OC/hr, 3.70 tons OC/year (see A.I.2.c) 3.05 lbs PE/hr, 2.12 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 4.02 lbs OC/hr, 3.70 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3900 lbs/hr by an emission factor of 0.00085 lb OC/lb sand for the main stack and 0.00018 lb OC/lb sand for miscellaneous stack #836. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 9750 tons/yr by an emission factor of 0.000313 ton OC/ton of sand for the main stack and 0.0000665 ton OC/ton sand for miscellaneous stack #836.

1.e Emission Limitation: 3.05 lbs PE/hr, 2.12 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3900 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand for the main stack and 0.000604 lb PE/lb sand for miscellaneous stack #836. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 9750 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand for the main stack and 0.000153 lb PE/lb sand for miscellaneous stack #836.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR3 CB CORE MACH #92 (P370)

Activity Description: CR3 (Plant 1) - Core Cold Box #92

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no. 92 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 5.36 lbs OC/hr, 4.93 tons OC/year 1.12 lbs PE/hr, 1.01 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR3 CB CORE MACH #91 (P371)

Activity Description: CR3 (Plant 1) - Core Cold Box #91

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no. 91 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 5.36 lbs OC/hr, 4.93 tons OC/year 1.12 lbs PE/hr, 1.01 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 CB CORE MACH #85 (P372)

Activity Description: CR8 (Plant 1) - Core Cold Box #85

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.85 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.42 lbs OC/hr, 6.83 tons OC/year (see A.I.2.c) 5.63 lbs PE/hr, 3.91 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.42 lbs OC/hr, 6.83 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by an emission factor of 0.00085 lb OC/lb sand for the main stack and 0.00018 lb OC/lb sand for miscellaneous stack #949. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission factor of 0.000313 ton OC/ton of sand for the main stack and 0.0000665 lb OC/lb sand for miscellaneous stack #949.

1.e Emission Limitation: 5.63 lbs PE/hr, 3.91 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand for the main stack and 0.000604 lb PE/lb sand for miscellaneous stack #949. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand for the main stack and 0.000153 lb PE/lb sand for miscellaneous stack #949.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: Compliance with the control efficiency shall be determined using the results of the testing performed on the inlet and outlet of the control equipment using Method 18 in 40 CFR Part 60, Appendix A and the following equation:

control efficiency = [(inlet testing results - outlet testing results)/inlet testing results] x 100%

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

2.a The emissions testing shall be conducted within 6 months after operation of PTI # 03-14001.

2.b The emissions testing shall be conducted to demonstrate compliance with the catalyst gas control efficiency requirement.

2.c The following test method shall be employed to demonstrate compliance with the catalyst gas control efficiency: Method 18 in 40 CFR part 60, Appendix A, to determine the concentration of catalyst gas.

2.d The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2.e Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 CB CORE MACH #86 (P373)

Activity Description: CR8 (Plant 1) - Core Cold Box #86

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.86 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.42 lbs OC/hr, 6.83 tons OC/year (see A.I.2.c) 5.63 lbs PE/hr, 3.91 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.42 lbs OC/hr, 6.83 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by an emission factor of 0.00085 lb OC/lb sand for the main stack and 0.00018 lb OC/lb sand for miscellaneous stack #951. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission factor of 0.000313 ton OC/ton of sand for the main stack and 0.0000665 lb OC/lb sand for miscellaneous stack #951.

1.e Emission Limitation: 5.63 lbs PE/hr, 3.91 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand for the main stack and 0.000604 lb PE/lb sand for miscellaneous stack #951. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand for the main stack and 0.000153 lb PE/lb sand for miscellaneous stack #951.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: Compliance with the control efficiency shall be determined using the results of the testing performed on the inlet and outlet of the control equipment using Method 18 in 40 CFR Part 60, Appendix A and the following equation:

control efficiency = [(inlet testing results - outlet testing results)/inlet testing results] x 100%

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

2.a The emissions testing shall be conducted within 6 months after operation of PTI # 03-14001.

2.b The emissions testing shall be conducted to demonstrate compliance with the catalyst gas control efficiency requirement.

2.c The following test method shall be employed to demonstrate compliance with the catalyst gas control efficiency: Method 18 in 40 CFR part 60, Appendix A, to determine the concentration of catalyst gas.

2.d The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2.e Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 CB CORE MACH #87 (P374)

Activity Description: CR8 (Plant 1) - Core Cold Box #87

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.87 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.42 lbs OC/hr, 6.83 tons OC/year (see A.I.2.c) 5.63 lbs PE/hr, 3.91 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.42 lbs OC/hr, 6.83 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by an emission factor of 0.00085 lb OC/lb sand for the main stack and 0.00018 lb OC/lb sand for miscellaneous stack #953. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission factor of 0.000313 ton OC/ton of sand for the main stack and 0.0000665 lb OC/lb sand for miscellaneous stack #953.

1.e Emission Limitation: 5.63 lbs PE/hr, 3.91 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand for the main stack and 0.000604 lb PE/lb sand for miscellaneous stack #953. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand for the main stack and 0.000153 lb PE/lb sand for miscellaneous stack #953.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: Compliance with the control efficiency shall be determined using the results of the testing performed on the inlet and outlet of the control equipment using Method 18 in 40 CFR Part 60, Appendix A and the following equation:

control efficiency = [(inlet testing results - outlet testing results)/inlet testing results] x 100%

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

2.a The emissions testing shall be conducted within 6 months after operation of PTI # 03-14001.

2.b The emissions testing shall be conducted to demonstrate compliance with the catalyst gas control efficiency requirement.

2.c The following test method shall be employed to demonstrate compliance with the catalyst gas control efficiency: Method 18 in 40 CFR part 60, Appendix A, to determine the concentration of catalyst gas.

2.d The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2.e Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 CB CORE MACH #88 (P375)

Activity Description: CR8 (Plant 1) - Core Cold Box #88

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.88 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.42 lbs OC/hr, 6.83 tons OC/year (see A.I.2.c) 5.63 lbs PE/hr, 3.91 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.42 lbs OC/hr, 6.83 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by an emission factor of 0.00085 lb OC/lb sand for the main stack and 0.00018 lb OC/lb sand for miscellaneous stack #956. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission factor of 0.000313 ton OC/ton of sand for the main stack and 0.0000665 lb OC/lb sand for miscellaneous stack #956.

1.e Emission Limitation: 5.63 lbs PE/hr, 3.91 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand for the main stack and 0.000604 lb PE/lb sand for miscellaneous stack #956. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand for the main stack and 0.000153 lb PE/lb sand for miscellaneous stack #956.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: Compliance with the control efficiency shall be determined using the results of the testing performed on the inlet and outlet of the control equipment using Method 18 in 40 CFR Part 60, Appendix A and the following equation:

control efficiency = [(inlet testing results - outlet testing results)/inlet testing results] x 100%

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

2.a The emissions testing shall be conducted within 6 months after operation of PTI # 03-14001.

2.b The emissions testing shall be conducted to demonstrate compliance with the catalyst gas control efficiency requirement.

2.c The following test method shall be employed to demonstrate compliance with the catalyst gas control efficiency: Method 18 in 40 CFR part 60, Appendix A, to determine the concentration of catalyst gas.

2.d The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2.e Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 OVEN PSTE #5FECO (P376)

Activity Description: CR8 (Plant 1) - FECO Line #5 Core Paste Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
paste dry oven FECO line no. 5	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.70 lbs OC/hr, 6.36 tons OC/year 2.47 lbs PE/hr, 1.70 tons PE/yr 0.86 lb carbon monoxide (CO)/hr, 1.40 tons CO/yr 1.02 lb nitrogen oxide (NOx)/hr, 1.67 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.70 lbs OC/hr, 6.36 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,280 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 42,992 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.47 lbs PE/hr, 1.70 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,280 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 42,992 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.86 lb CO/hr, 1.40 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 10,197 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 33.36 mm scf by the AP 42 emission factor. The maximum annual gas usage rate is calculated by multiplying the maximum hourly natural gas usage rate (10,197 scf/hr) by the ratio of the maximum annual sand (34,545 tons/yr) to the maximum hourly sand usage (26,280 lbs/hr), in pounds.

1.g Emission Limitation: 1.02 lb NOx/hr, 1.67 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 10,197 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 33.36 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 V COOLER #5FECO (P377)

Activity Description: CR8 (Plant 1) - FECO Line #5 Vertical Core Cooler

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
vertical cooler - FECO line no.5	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.70 lbs OC/hr, 6.36 tons OC/year 2.47 lbs PE/hr, 1.70 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

III. Monitoring and/or Record Keeping Requirements (continued)

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

V. Testing Requirements (continued)

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.70 lbs OC/hr, 6.36 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,280 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 42,992 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 2.47 lbs PE/hr, 1.70 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,280 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 42,992 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 CORE DRY #5 FECO (P378)

Activity Description: CR8 (Plant 1) FECO Line #5 Core Dip Drying Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven FECO line no.5	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.70 lbs OC/hr, 6.36 tons OC/year 2.47 lbs PE/hr, 1.70 tons PE/yr 0.86 lb carbon monoxide (CO)/hr, 1.40 tons CO/yr 1.02 lb nitrogen oxide (NOx)/hr, 1.67 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.70 lbs OC/hr, 6.36 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,280 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 42,992 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.47 lbs PE/hr, 1.70 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,280 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 42,992 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.86 lb CO/hr, 1.40 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 10,197 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 33.36 mm scf by the AP 42 emission factor. The maximum annual gas usage rate is calculated by multiplying the maximum hourly natural gas usage rate (10,197 scf/hr) by the ratio of the maximum annual sand (34,545 tons/yr) to the maximum hourly sand usage (26,280 lbs/hr), in pounds.

1.g Emission Limitation: 1.02 lb NOx/hr, 1.67 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 10,197 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 33.36 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR9 CB CORE MACH #89 (P379)

Activity Description: CR9 (Plant 1) - Core Cold Box #89

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.89 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 6.12 lbs OC/hr, 5.63 tons OC/year 1.28 lbs PE/hr, 1.16 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 6.12 lbs OC/hr, 5.63 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.28 lbs PE/hr, 1.16 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN2 BLAST CABINET 12 (P380)

Activity Description: FN2 (Plant 1) - No. 12 Blast Cabinet

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN2 blast cabinet 12 with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC Rule 3745-31-05(A)(3) (PTI #03-8574, issued 7/19/95)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A). See A.1.2.a.
	Consent Order No. 98 CV 33718 dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998.

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-081

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN2 blast cabinet 12 with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN2 GRINDER HD 12 BC (P381)

Activity Description: FN2 (Plant 1) - Gen III Head Grinder

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN2 grinder (HD 12 B/C) with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-8574, issued 7/19/95)	0.73 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).
	Consent Order No. 98 CV 33718, dated July 10, 1998	See A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3) and the emission limitation established pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998 .

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC- 081

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.73 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 grains/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
FN2 grinder (HD 12 B/C) with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: FN2 SHAKER N 12 B/C (P382)

Activity Description: FN2 (Plant 1) - Gen III Head Shaker

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
slurry system with 3 impingement scrubbers and 2 cartridge filters	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-8574, issued 7/19/95)	4.44 lbs particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b As part of the Consent Order cited above, the outlet concentration of PE from the following dust collectors associated with this emissions unit (EU) shall be limited to 0.020 grains per dry standard cubic foot (dscf) of exhaust gases:

Cartridge filter: DC-013A; DC-081
Impingement scrubber: DC-011A

2.c This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Impingement scrubber: DC-008; DC-013

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly during normal operations if weather conditions allow;
b. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
c. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1. above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitations:
4.44 lbs of PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
0.020 gr/dscf

Applicable Compliance Method:
Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test to show compliance with the allowable emissions limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.c Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
slurry system with 3 impingement scrubbers and 2 cartridge filters		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 HB CORE MACH #96 (P383)

Activity Description: CR8 (Plant 1) - Core Hot Box #96

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.96, core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 30.44 lbs OC/hr, 26.18 tons OC/year (includes conveyor emissions) 3.59 lbs PE/hr, 2.27 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 30.44 lbs OC/hr, 26.18 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5940 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,850 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.59 lbs PE/hr, 2.27 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5940 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,850 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 HB CORE MACH #97 (P384)

Activity Description: CR8 (Plant 1) - Core Hot Box #97

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.97, core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 30.44 lbs OC/hr, 26.18 tons OC/year (includes conveyor emissions) 3.59 lbs PE/hr, 2.27 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 30.44 lbs OC/hr, 26.18 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5940 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,850 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.59 lbs PE/hr, 2.27 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5940 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,850 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 HB CORE MACH #98 (P385)

Activity Description: CR8 (Plant 1) - Core Hot Box #98

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.98, core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 30.44 lbs OC/hr, 26.18 tons OC/year (includes conveyor emissions) 3.59 lbs PE/hr, 2.27 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 30.44 lbs OC/hr, 26.18 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5940 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,850 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.59 lbs PE/hr, 2.27 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5940 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,850 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR8 HB CORE MACH #99 (P386)

Activity Description: CR8 (Plant 1) - Core Hot Box #99

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.99, core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 30.44 lbs OC/hr, 26.18 tons OC/year (includes conveyor emissions) 3.59 lbs PE/hr, 2.27 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 30.44 lbs OC/hr, 26.18 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5940 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,850 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.59 lbs PE/hr, 2.27 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5940 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,850 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH #93-95 (P387)

Activity Description: CR5 (Plant 1) - Core Cold Box #93, 94, 95

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine 93,94,95 (three station machine) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 8.03 lbs OC/hr, 7.40 tons OC/year (see A.I.2.c) 6.10 lbs PE/hr, 4.24 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 8.03 lbs OC/hr, 7.40 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7800 lbs/hr by an emission factor of 0.00085 lb OC/lb sand for the main stack and 0.00018 lb OC/lb sand from miscellaneous stack #836. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 19,500 tons/yr by an emission factor of 0.000313 ton OC/ton of sand for the main stack and 0.0000665 ton OC/ton sand from miscellaneous stack #836.

1.e Emission Limitation: 6.10 lbs PE/hr, 4.24 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7800 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand from the main stack and 0.000604 lb PE/lb sand from miscellaneous stack #836. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 19,500 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand from the main stack and 0.000153 ton PE/ton sand from miscellaneous stack #836.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH 100-101 (P388)

Activity Description: CR9 (Plant 1) - Core Hot Box #100-101

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.100/101, core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 60.89 lbs OC/hr, 52.36 tons OC/year (includes conveyor emissions) 7.18 lbs PE/hr, 4.54 tons PE/yr 0.43 lb NOx/hr, 1.06 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 60.89 lbs OC/hr, 52.36 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 11,880 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 29,700 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 7.18 lbs PE/hr, 4.54 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 11,880 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 29,700 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: 0.43 lb NOx/hr, 1.06 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 4253 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 21.27 mm scf by the AP 42 emission factor.

1.g Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: OVEN - #5 CORE (P390)

Activity Description: CR9 (Plant 1) - Core Dip Drying Oven @ CB 89 & 90

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven no. 6	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 4.22 lbs OC/hr, 3.49 tons OC/year 1.35 lbs PE/hr, 0.93 tons PE/yr 0.47 lb carbon monoxide (CO)/hr, 0.77 tons CO/yr 0.56 lb nitrogen oxide (NOx)/hr, 0.91 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 4.22 lbs OC/hr, 3.49 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 14,400 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 23,557 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.35 lbs PE/hr, 0.93 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 14,400 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 23,557 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.47 lb CO/hr, 0.77 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5587 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 18.28 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.56 lb NOx/hr, 0.91 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5587 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 18.28 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND TRNSPRTR HB100 (P391)

Activity Description: (Plant 1) - Sand Transporter to HB 100-101

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand transporter HB 100 with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-9233, issued 7/21/93)	0.52 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Cartridge filter: DC-084

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.52 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand transporter HB 100 with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND TRNSPRTR HB102 (P392)

Activity Description: (Plant 1) - Sand Transporter to HB 102-103

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand transporter HB 102 with cartridge filter	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from the stacks associated with this source shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
	OAC rule 3745-17-11(B)	See A.I.2.a.
	OAC rule 3745-31-05(A)(3) (PTI #03-9233, issued 7/21/93)	0.52 lb particulate emissions (PE)/hr The requirements of this rule are equivalent to the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b This emissions unit is controlled by the following dust collector(s) and/or has emissions vented through the following uncontrolled stack(s) which are not applicable to the July 10, 1998 Consent Order No. 98 CV 33718, but which the company expects can achieve an outlet concentration of 0.020 gr/dscf of exhaust gases, as an average:

Cartridge filter: DC-084

II. Operational Restrictions

1. The pressure drop across the baghouse/cartridge filter associated with this emission unit, listed in A.I.2.b above, shall be maintained between 1.5 and 7.0 inches of water while the emission unit is in operation to ensure compliance with the pound per hour emission limit.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emission unit is in operation and when the weather and safe work conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for wet dust collectors, once weekly during normal operations if weather conditions allow; and
b. for dry dust collectors, once every two weeks during normal operations if weather conditions allow.

Visible emission observations shall not be required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

2. If visible emissions are observed per A.III.1 above, the permittee shall note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations, or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall perform checks of the pressure drop across the baghouse/cartridge filter associated with this emission unit once every two weeks that the emission unit is in operation. The following shall be noted in an operations log if the pressure drop across the dry dust collector is outside the range specified in A.II.1, above:

a. the date and time of the pressure drop reading;
b. the identification of the dry dust collector observed; and
c. the pressure drop across the dry dust collector.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that:

a. identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit, along with the identification of the stack;
b. identify all days during which a pressure drop across the baghouse/cartridge filter was outside the range specified in A.II.1, above, along with the identification of the baghouse/cartridge filter;
c. describe any corrective actions taken to minimize or eliminate the visible particulate emissions; and
d. describe any corrective actions taken to bring the pressure drop across the baghouse/cartridge filter within the range specified in A.II.1.

These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

1.a Emission Limitation:
0.52 lb PE/hr

Applicable Compliance Method:
The permittee shall demonstrate compliance with the hourly PE limitation based on the following formula:

E= summation of (Fi x Ci* x 60 min/hr x 1 lb/7000 gr from each stack)

Where:

E= the PE rate in lbs/hr from each stack that the emissions unit is vented to;
Fi= the flow rate of each stack that this emissions unit is vented to, in dscf; and
Ci= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.02 gr/dscf. Therefore, based on the monitoring and recordkeeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that the stacks that consistently have no visible emissions (i.e. have no visible emissions at least 95% of the time), have outlet grain loadings of less than 0.02 gr/dscf. Stacks that have visible emissions more than 5% of the time, will be required to stack test at the discretion of the Ohio EPA. If results from required emission testing indicate a particulate grain loading less than or equal to 0.020 gr/dscf from the stack tested, then the above procedure showing compliance shall remain valid. If results from required emission testing indicate a particulate grain loading greater than 0.020 gr/dscf from the stack tested, then either additional emission testing shall be conducted or a new calculation based upon the results of the emission testing, along with the calculated emissions from all stacks associated with this emission unit, shall be made to confirm compliance with the pound per hour PE limitation.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation by testing in accordance with Method 1- 5 of 40 CFR, Part 60, Appendix A.

1.b Emission Limitation:
Visible PE shall not exceed 20 percent opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand transporter HB 102 with cartridge filter		

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH 104-106 (P394)

Activity Description: CR4 (Plant 1) - Core Cold Box #104-106 (Loramendi Cell #4)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.104,105,106 (loramendi cell no. 4 three station machine) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 10.20 lbs OC/hr, 9.39 tons OC/year 2.14 lbs PE/hr, 1.93 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 10.20 lbs OC/hr, 9.39 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 12,000 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 30,000 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 2.14 lbs PE/hr, 1.93 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 12,000 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 30,000 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH 107-109 (P395)

Activity Description: CR4 (Plant 1) Core Cold Box #107-109 (Loramendi Cell #5)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.107/108/109 (loramendi cell no. 5 three station machine) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 10.20 lbs OC/hr, 9.39 tons OC/year 2.14 lbs PE/hr, 1.93 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 10.20 lbs OC/hr, 9.39 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 12,000 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 30,000 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 2.14 lbs PE/hr, 1.93 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 12,000 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 30,000 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: OVEN - CORE WASH 4&5 (P396)

Activity Description: CR4 (Plant 1) - Cell 4 & 5 Core Wash Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven, loramendi cell no. 4/5	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.03 lbs OC/hr, 5.81 tons OC/year 2.26 lbs PE/hr, 1.55 tons PE/yr 0.78 lb carbon monoxide (CO)/hr, 1.28 tons CO/yr 0.93 lb nitrogen oxide (NOx)/hr, 1.52 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.03 lbs OC/hr, 5.81 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 24,000 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 39,262 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.26 lbs PE/hr, 1.55 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 24,000 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 39,262 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.78 lb CO/hr, 1.28 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9312 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 30.47 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.93 lb NOx/hr, 1.52 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9312 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 30.47 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH 110-112 (P397)

Activity Description: CR4 (Plant 1) - Core Cold Box #110-112 (Loramendi Cell #6)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.110/111/112 and core sand mixer (loramendi cell no.6 three station machine)	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 10.20 lbs OC/hr, 9.39 tons OC/year 2.14 lbs PE/hr, 1.93 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 10.20 lbs OC/hr, 9.39 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 12,000 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 30,000 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 2.14 lbs PE/hr, 1.93 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 12,000 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 30,000 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH 113-115 (P398)

Activity Description: CR4 (Plant 1) - Core Cold Box #113-115 (Loramendi Cell #7)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.113/114/115 and core sand mixer (loramendi cell no.7 three station machine)	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 10.20 lbs OC/hr, 9.39 tons OC/year 2.14 lbs PE/hr, 1.93 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 10.20 lbs OC/hr, 9.39 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 12,000 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 30,000 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 2.14 lbs PE/hr, 1.93 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 12,000 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 30,000 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: OVEN - CORE WASH 6&7 (P399)

Activity Description: CR4 (Plant 1) - Cell 6 & 7 Core Wash Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven, loramendi cell no.6/7	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.03 lbs OC/hr, 5.81 tons OC/year 2.26 lbs PE/hr, 1.55 tons PE/yr 0.78 lb carbon monoxide (CO)/hr, 1.28 tons CO/yr 0.93 lb nitrogen oxide (NOx)/hr, 1.52 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.03 lbs OC/hr, 5.81 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 24,000 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 39,262 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.26 lbs PE/hr, 1.55 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 24,000 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 39,262 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.78 lb CO/hr, 1.28 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9312 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 30.47 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.93 lb NOx/hr, 1.52 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9312 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 30.47 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR9 CB CORE MACH #90 (P401)

Activity Description: CR9 (Plant 1) - Core Cold Box #90

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.90 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 6.12 lbs OC/hr, 5.63 tons OC/year 1.28 lbs PE/hr, 1.16 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 6.12 lbs OC/hr, 5.63 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.28 lbs PE/hr, 1.16 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 7200 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 18,000 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR9 OVEN - #7 CORE (P402)

Activity Description: CR9 (Plant 1) - Paste Cure Oven @ CB #89 & #90

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven no. 7	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 4.22 lbs OC/hr, 3.49 tons OC/year 1.35 lbs PE/hr, 0.93 tons PE/yr 0.47 lb carbon monoxide (CO)/hr, 0.77 tons CO/yr 0.56 lb nitrogen oxide (NOx)/hr, 0.91 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	none (See A.II.2.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The use of any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

4. The permittee shall collect and record the following information for each day for this emissions unit:

4.a The company identification for each coating and cleanup material employed; and

4.b documentation on whether or not each coating and clean up material is photochemically reactive.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

IV. Reporting Requirements (continued)

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing of any daily record showing the use of any noncomplying material (i.e., photochemically reactive material) in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after the exceedance occurs.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 4.22 lbs OC/hr, 3.49 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 14,400 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 23,557 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.35 lbs PE/hr, 0.93 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 14,400 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 23,557 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.47 lb CO/hr, 0.77 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5587 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 18.28 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.56 lb NOx/hr, 0.91 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 5587 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 18.28 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR3 CB CORE MACH 116 (P403)

Activity Description: CR3 (Plant 1) - Core Cold Box #116 (Loramendi Cell #8)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.116 (loramendi cell no.8) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 5.36 lbs OC/hr, 4.93 tons OC/year 1.12 lbs PE/hr, 1.01 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR3 CB CORE MACH 117 (P404)

Activity Description: CR3 (Plant 1) - Core Cold Box #117 (Loramendi Cell #8)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.117 (loramendi cell no.8) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 5.36 lbs OC/hr, 4.93 tons OC/year 1.12 lbs PE/hr, 1.01 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR3 CB CORE MACH 118 (P405)

Activity Description: CR3 (Plant 1) - Core Cold Box #118 (Loramendi Cell #8)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.118 (loramendi cell no.8) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 5.36 lbs OC/hr, 4.93 tons OC/year 1.12 lbs PE/hr, 1.01 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR3 OVEN - #8 CORE (P406)

Activity Description: CR3 (Plant 1) - Cell 8 Core Wash Oven

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven no.8	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxide (NOx)/hr, 1.60 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

2.e The liquid organic material in this emissions unit does not come into contact wit a flame or is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations from this rule.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: BEAD PRE-EXP CELL #1 (P407)

Activity Description: LF Cell #1 (Plant 2) - Bead Pre-expander

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
expandable polystyrene (EPS) bead preparation (pre-expander and pentane reduction) - cell #1	OAC rule 3745-31-05(D)	36.79 tons volatile organic compounds (VOC)/yr, based upon a rolling 12-month summation of bead throughput See A.I.2.a & A.II.1
	OAC rule 3745-31-05(A) (PTI #03-13364)	2.92 lbs VOC/hr, 12.79 tons VOC/yr See A.I.2.b & A.II.1
	OAC rule 3745-21-07(G)	See A.I.2.c.

2. Additional Terms and Conditions

2.a The permittee has requested federally enforceable restrictions to limit the potential to emit from this emissions unit by limiting the polystyrene bead usage. Combined annual VOC emissions from emissions units P407, P408, P409 and P410 shall not exceed 36.79 tons/yr, based on a rolling, 12-month restriction of polystyrene bead throughput (See A.II.2).

2.b The 2.92 lbs VOC/hr emission limitation was established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with this limitation.

2.c This emissions unit is not subject to the requirements specified in OAC rule 3745-21-07(G) because no liquid organic material, as defined in OAC rule 3745-21-01(C)(3), enters the EPS cell as a separate raw material.

II. Operational Restrictions

1. The raw expandable polystyrene beads used in this emissions unit shall not exceed a total VOC content of 6.0 percent by weight based on a weighted monthly average.

2. The maximum annual polystyrene bead throughput for emissions units P407, P408, P409 and P410 shall not exceed 1,839,600 lbs, combined per rolling 12-month period.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P407, P408, P409 and P410:

a. the permittee's identification for each lot of polystyrene beads processed;

b. the VOC content of polystyrene beads, weight percent, for each batch processed (Cvoc);

c. the amount of polystyrene beads processed, in pounds, for each batch processed (Mc);

d. the amount of polystyrene beads processed, in pounds, for the month (summation of c);

e. the weighted average of VOC content (in weight percent) of the polystyrene beads for the month calculated as follows:

Cvoc(avg) = (sum) [Cvoci x Mci] / (sum) Mci

f. the annual amount of polystyrene beads processed, in pounds, based on a rolling 12-month summation of the monthly amount of polystyrene beads processed.

2. In addition to the above information, the permittee shall also record the following information each month for emission units P407, P408, P409, and P410:

a. the calculated VOC emission rate, in tons per month, [Cvoc(avg) x A.III.1.d]; and

b. the annual VOC emission rate, based on a rolling, 12-month summation of the monthly VOC emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedance of the annual bead usage restrictions and emission limitation per rolling 12-month period.

2. The permittee shall submit deviation (excursion) reports which identify all exceedences of the weighted monthly average VOC content (6.0 percent by weight) for the raw expandable polystyrene beads.

3. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for VOC.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate: for VOC, Method 18, 25, or 25A of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations in section A.I. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 36.79 tons VOC per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be determined by the record keeping specified in section A.III.2 of the terms and conditions of this permit.

3.b Emission Limitation: 2.92 lb VOC/hr, 12.79 tons VOC/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 18, 25, or 25A of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: BEAD PRE-EXP CELL #2 (P408)

Activity Description: LF Cell #2 (Plant 2) - Bead Pre-expander

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
expandable polystyrene (EPS) bead preparation (pre-expander and pentane reduction) - cell #2	OAC rule 3745-31-05(D)	36.79 tons volatile organic compounds (VOC)/yr, based upon a rolling 12-month summation of bead throughput See A.I.2.a & A.II.1
	OAC rule 3745-31-05(A) (PTI #03-13364)	2.92 lbs VOC/hr, 12.79 tons VOC/yr See A.I.2.b & A.II.1
	OAC rule 3745-21-07(G)	See A.I.2.c.

2. Additional Terms and Conditions

2.a The permittee has requested federally enforceable restrictions to limit the potential to emit from this emissions unit by limiting the polystyrene bead usage. Combined annual VOC emissions from emissions units P407, P408, P409 and P410 shall not exceed 36.79 tons/yr, based on a rolling, 12-month restriction of polystyrene bead throughput (See A.II.2).

2.b The 2.92 lbs VOC/hr emission limitation was established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with this limitation.

2.c This emissions unit is not subject to the requirements specified in OAC rule 3745-21-07(G) because no liquid organic material, as defined in OAC rule 3745-21-01(C)(3), enters the EPS cell as a separate raw material.

II. Operational Restrictions

1. The raw expandable polystyrene beads used in this emissions unit shall not exceed a total VOC content of 6.0 percent by weight based on a weighted monthly average.

2. The maximum annual polystyrene bead throughput for emissions units P407, P408, P409 and P410 shall not exceed 1,839,600 lbs, combined per rolling 12-month period.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P407, P408, P409 and P410:

a. the permittee's identification for each lot of polystyrene beads processed;

b. the VOC content of polystyrene beads, weight percent, for each batch processed (Cvoc);

c. the amount of polystyrene beads processed, in pounds, for each batch processed (Mc);

d. the amount of polystyrene beads processed, in pounds, for the month (summation of c);

e. the weighted average of VOC content (in weight percent) of the polystyrene beads for the month calculated as follows:

Cvoc(avg) = (sum) [Cvoci x Mci] / (sum) Mci

f. the annual amount of polystyrene beads processed, in pounds, based on a rolling 12-month summation of the monthly amount of polystyrene beads processed.

2. In addition to the above information, the permittee shall also record the following information each month for emission units P407, P408, P409, and P410:

a. the calculated VOC emission rate, in tons per month, [Cvoc(avg) x A.III.1.d]; and

b. the annual VOC emission rate, based on a rolling, 12-month summation of the monthly VOC emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedance of the annual bead usage restrictions and emission limitation per rolling 12-month period.

2. The permittee shall submit deviation (excursion) reports which identify all exceedences of the weighted monthly average VOC content (6.0 percent by weight) for the raw expandable polystyrene beads.

3. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for VOC.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate: for VOC, Method 18, 25, or 25A of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations in section A.I. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 36.79 tons VOC per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be determined by the record keeping specified in section A.III.2 of the terms and conditions of this permit.

3.b Emission Limitation: 2.92 lb VOC/hr, 12.79 tons VOC/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 18, 25, or 25A of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: BEAD PRE-EXP CELL #3 (P409)

Activity Description: LF Cell #3 (Plant 2) - Bead Pre-expander

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
expandable polystyrene (EPS) bead preparation (pre-expander and pentane reduction) - cell #3	OAC rule 3745-31-05(D)	36.79 tons volatile organic compounds (VOC)/yr, based upon a rolling 12-month summation of bead throughput See A.I.2.a & A.II.1
	OAC rule 3745-31-05(A) (PTI #03-13364)	2.92 lbs VOC/hr, 12.79 tons VOC/yr See A.I.2.b & A.II.1
	OAC rule 3745-21-07(G)	See A.I.2.c.

2. Additional Terms and Conditions

2.a The permittee has requested federally enforceable restrictions to limit the potential to emit from this emissions unit by limiting the polystyrene bead usage. Combined annual VOC emissions from emissions units P407, P408, P409 and P410 shall not exceed 36.79 tons/yr, based on a rolling, 12-month restriction of polystyrene bead throughput (See A.II.2).

2.b The 2.92 lbs VOC/hr emission limitation was established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with this limitation.

2.c This emissions unit is not subject to the requirements specified in OAC rule 3745-21-07(G) because no liquid organic material, as defined in OAC rule 3745-21-01(C)(3), enters the EPS cell as a separate raw material.

II. Operational Restrictions

1. The raw expandable polystyrene beads used in this emissions unit shall not exceed a total VOC content of 6.0 percent by weight based on a weighted monthly average.

2. The maximum annual polystyrene bead throughput for emissions units P407, P408, P409 and P410 shall not exceed 1,839,600 lbs, combined per rolling 12-month period.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P407, P408, P409 and P410:

a. the permittee's identification for each lot of polystyrene beads processed;

b. the VOC content of polystyrene beads, weight percent, for each batch processed (Cvoc);

c. the amount of polystyrene beads processed, in pounds, for each batch processed (Mc);

d. the amount of polystyrene beads processed, in pounds, for the month (summation of c);

e. the weighted average of VOC content (in weight percent) of the polystyrene beads for the month calculated as follows:

Cvoc(avg) = (sum) [Cvoci x Mci] / (sum) Mci

f. the annual amount of polystyrene beads processed, in pounds, based on a rolling 12-month summation of the monthly amount of polystyrene beads processed.

2. In addition to the above information, the permittee shall also record the following information each month for emission units P407, P408, P409, and P410:

a. the calculated VOC emission rate, in tons per month, [Cvoc(avg) x A.III.1.d]; and

b. the annual VOC emission rate, based on a rolling, 12-month summation of the monthly VOC emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedance of the annual bead usage restrictions and emission limitation per rolling 12-month period.

2. The permittee shall submit deviation (excursion) reports which identify all exceedences of the weighted monthly average VOC content (6.0 percent by weight) for the raw expandable polystyrene beads.

3. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for VOC.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate: for VOC, Method 18, 25, or 25A of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations in section A.I. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 36.79 tons VOC per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be determined by the record keeping specified in section A.III.2 of the terms and conditions of this permit.

3.b Emission Limitation: 2.92 lb VOC/hr, 12.79 tons VOC/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 18, 25, or 25A of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: BEAD PRE-EXP CELL #4 (P410)

Activity Description: LF Cell #4 (Plant 2) - Bead Pre-expander

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
expandable polystyrene (EPS) bead preparation (pre-expander and pentane reduction) - cell #4	OAC rule 3745-31-05(D)	36.79 tons volatile organic compounds (VOC)/yr, based upon a rolling 12-month summation of bead throughput See A.I.2.a & A.II.1
	OAC rule 3745-31-05(A) (PTI #03-13364)	2.92 lbs VOC/hr, 12.79 tons VOC/yr See A.I.2.b & A.II.1
	OAC rule 3745-21-07(G)	See A.I.2.c.

2. Additional Terms and Conditions

2.a The permittee has requested federally enforceable restrictions to limit the potential to emit from this emissions unit by limiting the polystyrene bead usage. Combined annual VOC emissions from emissions units P407, P408, P409 and P410 shall not exceed 36.79 tons/yr, based on a rolling, 12-month restriction of polystyrene bead throughput (See A.II.2).

2.b The 2.92 lbs VOC/hr emission limitation was established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with this limitation.

2.c This emissions unit is not subject to the requirements specified in OAC rule 3745-21-07(G) because no liquid organic material, as defined in OAC rule 3745-21-01(C)(3), enters the EPS cell as a separate raw material.

II. Operational Restrictions

1. The raw expandable polystyrene beads used in this emissions unit shall not exceed a total VOC content of 6.0 percent by weight based on a weighted monthly average.

2. The maximum annual polystyrene bead throughput for emissions units P407, P408, P409 and P410 shall not exceed 1,839,600 lbs, combined per rolling 12-month period.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P407, P408, P409 and P410:

a. the permittee's identification for each lot of polystyrene beads processed;

b. the VOC content of polystyrene beads, weight percent, for each batch processed (Cvoc);

c. the amount of polystyrene beads processed, in pounds, for each batch processed (Mc);

d. the amount of polystyrene beads processed, in pounds, for the month (summation of c);

e. the weighted average of VOC content (in weight percent) of the polystyrene beads for the month calculated as follows:

Cvoc(avg) = (sum) [Cvoci x Mci] / (sum) Mci

f. the annual amount of polystyrene beads processed, in pounds, based on a rolling 12-month summation of the monthly amount of polystyrene beads processed.

2. In addition to the above information, the permittee shall also record the following information each month for emission units P407, P408, P409, and P410:

a. the calculated VOC emission rate, in tons per month, [Cvoc(avg) x A.III.1.d]; and

b. the annual VOC emission rate, based on a rolling, 12-month summation of the monthly VOC emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all exceedance of the annual bead usage restrictions and emission limitation per rolling 12-month period.

2. The permittee shall submit deviation (excursion) reports which identify all exceedences of the weighted monthly average VOC content (6.0 percent by weight) for the raw expandable polystyrene beads.

3. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for VOC.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate: for VOC, Method 18, 25, or 25A of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations in section A.I. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 36.79 tons VOC per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be determined by the record keeping specified in section A.III.2 of the terms and conditions of this permit.

3.b Emission Limitation: 2.92 lb VOC/hr, 12.79 tons VOC/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 18, 25, or 25A of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CASTLINE CELL #1 (P411)

Activity Description: LF Cell #1 (Plant 2) - Castline

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
castline (aluminum pouring, cooling, cleaning, & sand shakeout) with baghouse, regenerative catalytic oxidizer (RCO), and duct burner - cell #1	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements (See A.I.2.a)
	OAC rule 3745-31-05(D)	Duct Burner emissions: 13.61 tons nitrogen oxide (NOx) per rolling 12-month period based on natural gas usage restrictions (See A.I.2.b) RCO emissions: 6.93 tons NOx per rolling 12-month period based on natural gas usage restrictions (See A.I.2.b) See A.I.2.e

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-31-05(A) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rule 3745-31-(10-20), and OAC rule 3745-17-07(A). 2.27 lbs NOx/hr, 9.94 tons NOx/yr 2.1 lbs carbon monoxide (CO)/hr, 9.2 tons CO/yr 0.41 lbs volatile organic compounds (VOC)/hr, 1.8 tons VOC/yr 1.2 lbs particulate emissions (PE)/hr, 5.26 tons PE/yr See A.I.2.d
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions.

i. use of duct burner equipped with low NOx burners and designed to emit NOx at a rate of 80 lbs/mmcf of natural gas burned.

ii. use of RCO equipped with low NOx burners and designed to emit NOx at a rate of 110 lbs/mmcf of natural gas burned.

2.b In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units contained in this permit to install by limiting natural gas usage. Combined annual NOx emissions from the duct burners on emissions units P411, P412, P413 and P414 shall not exceed 13.61 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.1). Combined annual NOx emissions from the RCO on emissions units P411, P412, P413 and P414 shall not exceed 6.93 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.2).

2.c All PE is assumed to be in the form of PM10.

2.d Part of the Best available technology (BAT) requirements for this emissions unit has been determined to be the use of a baghouse.

2. Additional Terms and Conditions (continued)

2.e The emissions from this operation are vented to a stack that has a duct burner, and a stack that has a baghouse followed in series by an RCO.

II. Operational Restrictions

1. The maximum annual natural gas usage on the duct burners for emissions units P411, P412, P413 and P414 shall not exceed 340.2 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

2. The maximum annual natural gas usage on the RCO for emissions units P411, P412, P413 and P414 shall not exceed 126 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

3. Temperature of the catalyst bed, in the RCO, shall not be less than 650 degrees Fahrenheit when the emissions unit is in operation.

4. To enure proper operation of the emissions unit, the permittee shall employ a "interlock system" that only allows operation of the emissions unit when the catalytic bed temperature in the RCO is in compliance with the operational restriction in section A.II.3. Also, the "interlock system" shall only allow operation of the emissions unit when the monitoring devices associated with the operational restriction in section A.II.3 are operational (i.e. temperature monitor failure will shutdown the operation).

5. The pressure drop across the baghouse shall be maintained within the range of 0.5 - 8 inches of water while the emissions unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P411, P412, P413 and P414, combined:

a. the quantity of natural gas combusted in all duct burners, in mmCf; and

b. the annual natural gas usage in the duct burners, based on a rolling, 12-month summation of the monthly natural gas usage.

2. The permittee shall maintain monthly records of the following information for emissions units P411, P412, P413 and P414, combined:

a. the quantity of natural gas combusted in all RCO's, in mmCf; and

b. the annual natural gas usage in the RCO's, based on a rolling, 12-month summation of the monthly natural gas usage.

3. In addition to the above information, the permittee shall also record the following information each month for emissions units P411, P412, P413 and P414, combined:

a. the calculated NOx emission rate*, in tons per month, for the duct burner; and

b. the annual NOx emission rate, from the duct burner, based on a rolling, 12-month summation of the monthly NOx emissions.

*emissions from the duct burner shall be determined by multiplying the natural gas usage rate (mmcf) by the BACT limit of 80 lbs/mmcf.

III. Monitoring and/or Record Keeping Requirements (continued)

4. In addition to the above information, the permittee shall also record the following information each month for emissions units P411, P412, P413 and P414, combined:

a. the calculated NOx emission rate*, in tons per month, for the RCO stack; and

b. the annual NOx emission rate, from the RCO, based on a rolling, 12-month summation of the monthly NOx emissions.

*emissions from the RCO shall be determined by multiplying the natural gas usage rate (mmcf) by the BACT limit of 110 lbs/mmcf.

5. The permittee shall maintain monthly records that document any time periods when the "interlock system" associated with the RCO failed to operate in accordance with the requirements in sections A.II.4. of this permit. The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

6. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a continuous basis.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restrictions and emission limitation per rolling 12-month period, for all the duct burners.

2. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restriction and emission limitation per rolling 12-month period, for the RCO.

3. The permittee shall submit deviation (excursion) reports which identify any time periods the "interlock system" associated with the RCO did not operate in compliance with the requirements specified in section A.II.4.

4. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods during which the emissions unit was in operation, that the pressure drop across the baghouse did not comply with the allowable range specified above.

5. The deviation reports above shall be submitted in accordance with paragraph A.I.c of the General Terms and Conditions of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO,VOC and PE.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

VOC: Methods 1-4 and either 18, 25, or 25A of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 13.61 tons NOx per rolling 12-month period from the duct burner for emissions units P411, P412, P413 and P414, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.3.

3.b Emission Limitation: 6.93 tons NOx per rolling 12-month period from the RCO for emissions units P411, P412, P413 and P414, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.4.

V. Testing Requirements (continued)

3.c Emission Limitation: 2.27 lbs NOx/hr, 9.94 tons NOx/yr

Applicable Compliance Method: The lbs/hr NOx emissions are determined by adding the lbs/hr emissions from the RCO and duct burner. Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 80 lbs NOx/mmcf of natural gas burned from the duct burner

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

3.e Emission Limitation: 110 lbs NOx/mmcf of natural gas burned from the RCO

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

3.f Emission Limitation: 2.1 lbs CO/hr, 9.2 tons CO/yr

Applicable Compliance Method: The lbs/hr CO emissions are determined by adding the lbs/hr emissions from the RCO and duct burner. Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.g Emission Limitation: 0.41 lb VOC/hr, 1.8 tons VOC/yr

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and either 18, 25, or 25A of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.h Emission Limitation: 1.2 lbs PE/hr, 5.26 tons PE/yr

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

V. Testing Requirements (continued)

3.i Emission Limitation: Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the visible emissions limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CASTLINE CELL #2 (P412)

Activity Description: LF Cell #2 (Plant 2) - Castline

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
castline (aluminum pouring, cooling, cleaning, & sand shakeout) with RCO and duct burner - cell #2	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements (See A.I.2.a)
	OAC rule 3745-31-05(D)	Duct Burner emissions: 13.61 tons nitrogen oxide (NOx) per rolling 12-month period based on natural gas usage restrictions (See A.I.2.b) RCO emissions: 6.93 tons NOx per rolling 12-month period based on natural gas usage restrictions (See A.I.2.b) See A.I.2.e
	OAC rule 3745-31-05(A) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rule 3745-31-(10-20), and OAC rule 3745-17-07(A). 2.27 lbs NOx/hr, 9.94 tons NOx/yr 2.1 lbs carbon monoxide (CO)/hr, 9.2 tons CO/yr 0.41 lbs volatile organic compounds (VOC)/hr, 1.8 tons VOC/yr 1.2 lbs particulate emissions (PE)/hr, 5.26 tons PE/yr See A.I.2.d

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions.

i. use of duct burner equipped with low NOx burners and designed to emit NOx at a rate of 80 lbs/mmcf of natural gas burned.

ii. use of RCO equipped with low NOx burners and designed to emit NOx at a rate of 110 lbs/mmcf of natural gas burned.

2.b In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units contained in this permit to install by limiting natural gas usage. Combined annual NOx emissions from the duct burners on emissions units P411, P412, P413 and P414 shall not exceed 13.61 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.1). Combined annual NOx emissions from the RCO on emissions units P411, P412, P413 and P414 shall not exceed 6.93 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.2).

2.c All PE is assumed to be in the form of PM10.

2.d Part of the Best available technology (BAT) requirements for this emissions unit has been determined to be the use of a baghouse.

2.e The emissions from this operation are vented to a stack that has a duct burner, and a stack that has a baghouse followed in series by an RCO.

II. Operational Restrictions

1. The maximum annual natural gas usage on the duct burners for emissions units P411, P412, P413 and P414 shall not exceed 340.2 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

2. The maximum annual natural gas usage on the RCO for emissions units P411, P412, P413 and P414 shall not exceed 126 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

3. Temperature of the catalyst bed, in the RCO, shall not be less than 650 degrees Fahrenheit when the emissions unit is in operation.

4. To enure proper operation of the emissions unit, the permittee shall employ a "interlock system" that only allows operation of the emissions unit when the catalytic bed temperature in the RCO is in compliance with the operational restriction in section A.II.3. Also, the "interlock system" shall only allow operation of the emissions unit when the monitoring devices associated with the operational restriction in section A.II.3 are operational (i.e. temperature monitor failure will shutdown the operation).

II. Operational Restrictions (continued)

5. The pressure drop across the baghouse shall be maintained within the range of 0.5 - 8 inches of water while the emissions unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P411, P412, P413 and P414, combined:

a. the quantity of natural gas combusted in all duct burners, in mmCf; and

b. the annual natural gas usage in the duct burners, based on a rolling, 12-month summation of the monthly natural gas usage.

2. The permittee shall maintain monthly records of the following information for emissions units P411, P412, P413 and P414, combined:

a. the quantity of natural gas combusted in all RCO's, in mmCf; and

b. the annual natural gas usage in the RCO's, based on a rolling, 12-month summation of the monthly natural gas usage.

3. In addition to the above information, the permittee shall also record the following information each month for emissions units P411, P412, P413 and P414, combined:

a. the calculated NOx emission rate*, in tons per month, for the duct burner; and

b. the annual NOx emission rate, from the duct burner, based on a rolling, 12-month summation of the monthly NOx emissions.

*emissions from the duct burner shall be determined by multiplying the natural gas usage rate (mmcf) by the BACT limit of 80 lbs/mmcf.

4. In addition to the above information, the permittee shall also record the following information each month for emissions units P411, P412, P413 and P414, combined:

a. the calculated NOx emission rate*, in tons per month, for the RCO stack; and

b. the annual NOx emission rate, from the RCO, based on a rolling, 12-month summation of the monthly NOx emissions.

*emissions from the RCO shall be determined by multiplying the natural gas usage rate (mmcf) by the BACT limit of 110 lbs/mmcf.

5. The permittee shall maintain monthly records that document any time periods when the "interlock system" associated with the RCO failed to operate in accordance with the requirements in sections A.II.4. of this permit. The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

6. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a continuous basis.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restrictions and emission limitation per rolling 12-month period, for all the duct burners.

IV. Reporting Requirements (continued)

2. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restriction and emission limitation per rolling 12-month period, for the RCO.

3. The permittee shall submit deviation (excursion) reports which identify any time periods the "interlock system" associated with the RCO did not operate in compliance with the requirements specified in section A.II.4.

4. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods during which the emissions unit was in operation, that the pressure drop across the baghouse did not comply with the allowable range specified above.

5. The deviation reports above shall be submitted in accordance with paragraph A.I.c of the General Terms and Conditions of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO,VOC and PE.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

VOC: Methods 1-4 and either 18, 25, or 25A of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

3.a Emission Limitation: 13.61 tons NOx per rolling 12-month period from the duct burner for emissions units P411, P412, P413 and P414, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.3.

3.b Emission Limitation: 6.93 tons NOx per rolling 12-month period from the RCO for emissions units P411, P412, P413 and P414, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.4.

3.c Emission Limitation: 2.27 lbs NOx/hr, 9.94 tons NOx/yr

Applicable Compliance Method: The lbs/hr NOx emissions are determined by adding the lbs/hr emissions from the RCO and duct burner. Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 80 lbs NOx/mmcf of natural gas burned from the duct burner

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

3.e Emission Limitation: 110 lbs NOx/mmcf of natural gas burned from the RCO

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

3.f Emission Limitation: 2.1 lbs CO/hr, 9.2 tons CO/yr

Applicable Compliance Method: The lbs/hr CO emissions are determined by adding the lbs/hr emissions from the RCO and duct burner. Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.g Emission Limitation: 0.41 lb VOC/hr, 1.8 tons VOC/yr

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and either 18, 25, or 25A of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

V. Testing Requirements (continued)

3.h Emission Limitation: 1.2 lbs PE/hr, 5.26 tons PE/yr

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.i Emission Limitation: Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the visible emissions limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CASTLINE CELL #3 (P413)

Activity Description: LF Cell #3 (Plant 2) - Castline

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
castline (aluminum pouring, cooling, cleaning, & sand shakeout) with RCO and duct burner - cell #3	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements (See A.I.2.a)
	OAC rule 3745-31-05(D)	Duct Burner emissions: 13.61 tons nitrogen oxide (NOx) per rolling 12-month period based on natural gas usage restrictions (See A.I.2.b) RCO emissions: 6.93 tons NOx per rolling 12-month period based on natural gas usage restrictions (See A.I.2.b) See A.I.2.e
	OAC rule 3745-31-05(A) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rule 3745-31-(10-20), and OAC rule 3745-17-07(A). 2.27 lbs NOx/hr, 9.94 tons NOx/yr 2.1 lbs carbon monoxide (CO)/hr, 9.2 tons CO/yr 0.41 lbs volatile organic compounds (VOC)/hr, 1.8 tons VOC/yr 1.2 lbs particulate emissions (PE)/hr, 5.26 tons PE/yr See A.I.2.d

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions.

i. use of duct burner equipped with low NOx burners and designed to emit NOx at a rate of 80 lbs/mmcf of natural gas burned.

ii. use of RCO equipped with low NOx burners and designed to emit NOx at a rate of 110 lbs/mmcf of natural gas burned.

2.b In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units contained in this permit to install by limiting natural gas usage. Combined annual NOx emissions from the duct burners on emissions units P411, P412, P413 and P414 shall not exceed 13.61 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.1). Combined annual NOx emissions from the RCO on emissions units P411, P412, P413 and P414 shall not exceed 6.93 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.2).

2.c All PE is assumed to be in the form of PM10.

2.d Part of the Best available technology (BAT) requirements for this emissions unit has been determined to be the use of a baghouse.

2.e The emissions from this operation are vented to a stack that has a duct burner, and a stack that has a baghouse followed in series by an RCO.

II. Operational Restrictions

1. The maximum annual natural gas usage on the duct burners for emissions units P411, P412, P413 and P414 shall not exceed 340.2 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

2. The maximum annual natural gas usage on the RCO for emissions units P411, P412, P413 and P414 shall not exceed 126 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

3. Temperature of the catalyst bed, in the RCO, shall not be less than 650 degrees Fahrenheit when the emissions unit is in operation.

4. To enure proper operation of the emissions unit, the permittee shall employ a "interlock system" that only allows operation of the emissions unit when the catalytic bed temperature in the RCO is in compliance with the operational restriction in section A.II.3. Also, the "interlock system" shall only allow operation of the emissions unit when the monitoring devices associated with the operational restriction in section A.II.3 are operational (i.e. temperature monitor failure will shutdown the operation).

II. Operational Restrictions (continued)

5. The pressure drop across the baghouse shall be maintained within the range of 0.5 - 8 inches of water while the emissions unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P411, P412, P413 and P414, combined:

a. the quantity of natural gas combusted in all duct burners, in mmCf; and

b. the annual natural gas usage in the duct burners, based on a rolling, 12-month summation of the monthly natural gas usage.

2. The permittee shall maintain monthly records of the following information for emissions units P411, P412, P413 and P414, combined:

a. the quantity of natural gas combusted in all RCO's, in mmCf; and

b. the annual natural gas usage in the RCO's, based on a rolling, 12-month summation of the monthly natural gas usage.

3. In addition to the above information, the permittee shall also record the following information each month for emissions units P411, P412, P413 and P414, combined:

a. the calculated NOx emission rate*, in tons per month, for the duct burner; and

b. the annual NOx emission rate, from the duct burner, based on a rolling, 12-month summation of the monthly NOx emissions.

*emissions from the duct burner shall be determined by multiplying the natural gas usage rate (mmcf) by the BACT limit of 80 lbs/mmcf.

4. In addition to the above information, the permittee shall also record the following information each month for emissions units P411, P412, P413 and P414, combined:

a. the calculated NOx emission rate*, in tons per month, for the RCO stack; and

b. the annual NOx emission rate, from the RCO, based on a rolling, 12-month summation of the monthly NOx emissions.

*emissions from the RCO shall be determined by multiplying the natural gas usage rate (mmcf) by the BACT limit of 110 lbs/mmcf.

5. The permittee shall maintain monthly records that document any time periods when the "interlock system" associated with the RCO failed to operate in accordance with the requirements in sections A.II.4. of this permit. The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

6. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a continuous basis.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restrictions and emission limitation per rolling 12-month period, for all the duct burners.

IV. Reporting Requirements (continued)

2. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restriction and emission limitation per rolling 12-month period, for the RCO.

3. The permittee shall submit deviation (excursion) reports which identify any time periods the "interlock system" associated with the RCO did not operate in compliance with the requirements specified in section A.II.4.

4. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods during which the emissions unit was in operation, that the pressure drop across the baghouse did not comply with the allowable range specified above.

5. The deviation reports above shall be submitted in accordance with paragraph A.I.c of the General Terms and Conditions of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO,VOC and PE.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

VOC: Methods 1-4 and either 18, 25, or 25A of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

3.a Emission Limitation: 13.61 tons NOx per rolling 12-month period from the duct burner for emissions units P411, P412, P413 and P414, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.3.

3.b Emission Limitation: 6.93 tons NOx per rolling 12-month period from the RCO for emissions units P411, P412, P413 and P414, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.4.

3.c Emission Limitation: 2.27 lbs NOx/hr, 9.94 tons NOx/yr

Applicable Compliance Method: The lbs/hr NOx emissions are determined by adding the lbs/hr emissions from the RCO and duct burner. Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 80 lbs NOx/mmcf of natural gas burned from the duct burner

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

3.e Emission Limitation: 110 lbs NOx/mmcf of natural gas burned from the RCO

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

3.f Emission Limitation: 2.1 lbs CO/hr, 9.2 tons CO/yr

Applicable Compliance Method: The lbs/hr CO emissions are determined by adding the lbs/hr emissions from the RCO and duct burner. Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.g Emission Limitation: 0.41 lb VOC/hr, 1.8 tons VOC/yr

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and either 18, 25, or 25A of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

V. Testing Requirements (continued)

3.h Emission Limitation: 1.2 lbs PE/hr, 5.26 tons PE/yr

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.i Emission Limitation: Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the visible emissions limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CASTLINE CELL #4 (P414)

Activity Description: LF Cell #4 (Plant 2) - Castline

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
castline (aluminum pouring, cooling, cleaning, & sand shakeout) with RCO and duct burner - cell #4	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements (See A.I.2.a)
	OAC rule 3745-31-05(D)	Duct Burner emissions: 13.61 tons nitrogen oxide (NOx) per rolling 12-month period based on natural gas usage restrictions (See A.I.2.b) RCO emissions: 6.93 tons NOx per rolling 12-month period based on natural gas usage restrictions (See A.I.2.b) See A.I.2.e
	OAC rule 3745-31-05(A) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rule 3745-31-(10-20), and OAC rule 3745-17-07(A). 2.27 lbs NOx/hr, 9.94 tons NOx/yr 2.1 lbs carbon monoxide (CO)/hr, 9.2 tons CO/yr 0.41 lbs volatile organic compounds (VOC)/hr, 1.8 tons VOC/yr 1.2 lbs particulate emissions (PE)/hr, 5.26 tons PE/yr See A.I.2.d

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions.

i. use of duct burner equipped with low NOx burners and designed to emit NOx at a rate of 80 lbs/mmcf of natural gas burned.

ii. use of RCO equipped with low NOx burners and designed to emit NOx at a rate of 110 lbs/mmcf of natural gas burned.

2.b In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units contained in this permit to install by limiting natural gas usage. Combined annual NOx emissions from the duct burners on emissions units P411, P412, P413 and P414 shall not exceed 13.61 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.1). Combined annual NOx emissions from the RCO on emissions units P411, P412, P413 and P414 shall not exceed 6.93 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.2).

2.c All PE is assumed to be in the form of PM10.

2.d Part of the Best available technology (BAT) requirements for this emissions unit has been determined to be the use of a baghouse.

2.e The emissions from this operation are vented to a stack that has a duct burner, and a stack that has a baghouse followed in series by an RCO.

II. Operational Restrictions

1. The maximum annual natural gas usage on the duct burners for emissions units P411, P412, P413 and P414 shall not exceed 340.2 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

2. The maximum annual natural gas usage on the RCO for emissions units P411, P412, P413 and P414 shall not exceed 126 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

3. Temperature of the catalyst bed, in the RCO, shall not be less than 650 degrees Fahrenheit when the emissions unit is in operation.

4. To enure proper operation of the emissions unit, the permittee shall employ a "interlock system" that only allows operation of the emissions unit when the catalytic bed temperature in the RCO is in compliance with the operational restriction in section A.II.3. Also, the "interlock system" shall only allow operation of the emissions unit when the monitoring devices associated with the operational restriction in section A.II.3 are operational (i.e. temperature monitor failure will shutdown the operation).

II. Operational Restrictions (continued)

5. The pressure drop across the baghouse shall be maintained within the range of 0.5 - 8 inches of water while the emissions unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P411, P412, P413 and P414, combined:

a. the quantity of natural gas combusted in all duct burners, in mmCf; and

b. the annual natural gas usage in the duct burners, based on a rolling, 12-month summation of the monthly natural gas usage.

2. The permittee shall maintain monthly records of the following information for emissions units P411, P412, P413 and P414, combined:

a. the quantity of natural gas combusted in all RCO's, in mmCf; and

b. the annual natural gas usage in the RCO's, based on a rolling, 12-month summation of the monthly natural gas usage.

3. In addition to the above information, the permittee shall also record the following information each month for emissions units P411, P412, P413 and P414, combined:

a. the calculated NOx emission rate*, in tons per month, for the duct burner; and

b. the annual NOx emission rate, from the duct burner, based on a rolling, 12-month summation of the monthly NOx emissions.

*emissions from the duct burner shall be determined by multiplying the natural gas usage rate (mmcf) by the BACT limit of 80 lbs/mmcf.

4. In addition to the above information, the permittee shall also record the following information each month for emissions units P411, P412, P413 and P414, combined:

a. the calculated NOx emission rate*, in tons per month, for the RCO stack; and

b. the annual NOx emission rate, from the RCO, based on a rolling, 12-month summation of the monthly NOx emissions.

*emissions from the RCO shall be determined by multiplying the natural gas usage rate (mmcf) by the BACT limit of 110 lbs/mmcf.

5. The permittee shall maintain monthly records that document any time periods when the "interlock system" associated with the RCO failed to operate in accordance with the requirements in sections A.II.4. of this permit. The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

6. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a continuous basis.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restrictions and emission limitation per rolling 12-month period, for all the duct burners.

IV. Reporting Requirements (continued)

2. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restriction and emission limitation per rolling 12-month period, for the RCO.

3. The permittee shall submit deviation (excursion) reports which identify any time periods the "interlock system" associated with the RCO did not operate in compliance with the requirements specified in section A.II.4.

4. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods during which the emissions unit was in operation, that the pressure drop across the baghouse did not comply with the allowable range specified above.

5. The deviation reports above shall be submitted in accordance with paragraph A.I.c of the General Terms and Conditions of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO,VOC and PE.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

VOC: Methods 1-4 and either 18, 25, or 25A of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

3.a Emission Limitation: 13.61 tons NOx per rolling 12-month period from the duct burner for emissions units P411, P412, P413 and P414, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.3.

3.b Emission Limitation: 6.93 tons NOx per rolling 12-month period from the RCO for emissions units P411, P412, P413 and P414, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.4.

3.c Emission Limitation: 2.27 lbs NOx/hr, 9.94 tons NOx/yr

Applicable Compliance Method: The lbs/hr NOx emissions are determined by adding the lbs/hr emissions from the RCO and duct burner. Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 80 lbs NOx/mmcf of natural gas burned from the duct burner

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

3.e Emission Limitation: 110 lbs NOx/mmcf of natural gas burned from the RCO

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

3.f Emission Limitation: 2.1 lbs CO/hr, 9.2 tons CO/yr

Applicable Compliance Method: The lbs/hr CO emissions are determined by adding the lbs/hr emissions from the RCO and duct burner. Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.g Emission Limitation: 0.41 lb VOC/hr, 1.8 tons VOC/yr

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and either 18, 25, or 25A of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

V. Testing Requirements (continued)

3.h Emission Limitation: 1.2 lbs PE/hr, 5.26 tons PE/yr

Applicable Compliance Method: Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A. Further testing will be conducted in accordance with Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lbs/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.i Emission Limitation: Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the visible emissions limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND SILO CELL #1 (P415)

Activity Description: LF Cell #1 (Plant 2) - Sand Silo

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand silo (pneumatic conveyance/storage system) with baghouse - cell #1	OAC rule 3745-31-05(D)	0.008 tons particulate emissions (PE) per rolling 12-month period based upon sand throughput restrictions (See A.I.2.a)
	OAC rule 3745-31-05(A)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 0.02 lb PE/hr, 0.008 tons PE/year
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity, as a six-minute average, except as provided by rule.

2. Additional Terms and Conditions

2.a Combined annual PE emissions from emissions units P415, P416, P417 and P418 shall not exceed 0.008 tons/yr, based upon a rolling, 12-month restriction of sand throughput (See A.II.1).

2.b All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The maximum annual sand throughput for emissions units P415, P416, P417 and P418 shall not exceed 18,922 tons/yr, combined, based on a rolling 12-month summation of sand throughput.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P415, P416, P417 and P418, combined:

a. the quantity of sand throughput, in tons; and

b. the annual sand throughput, based on a rolling, 12-month summation of the monthly sand throughput.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P415, P416, P417 and P418, combined:

a. the calculated PE emission rate, in tons per month; and

b. the annual PE emission rate, in tons, based on a rolling, 12-month summation of the monthly PE emissions.

3. The permittee shall perform checks when new sand is delivered, for any visible particulate emissions for the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall note the following in the operations log:

a. the color of the emissions;

b. whether the emissions are representative of normal operations;

c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

d. the total duration of any visible emission incident; and

e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual sand throughput restriction and emission limitation per rolling 12-month period.

The deviation reports shall be submitted in accordance with paragraph A.I.c of the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6 month period.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I. of the terms and conditions of this permit shall be determined in accordance with the following methods:

1.a Emission Limitation: 0.008 tons PE per rolling 12-month period for emissions units P415, P416, P417 and P418, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.2.

V. Testing Requirements (continued)

1.b Emission Limitation: 0.02 lbs PE/hr, 0.008 tons PE/yr

Applicable Compliance Method: The hourly emission limitation represents the emission unit's potential to emit based on a maximum outlet concentration 0.005 gr/dscf and a maximum volumetric air flow rate of 500 cfm.

Compliance with the tons/year PE limitation shall be demonstrated through compliance with the rolling 12-month emission limitation.

1.c Emission Limitation: 20 % opacity as a six-minute average, except as provided by rule

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the visible emissions limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND SILO CELL #2 (P416)

Activity Description: LF Cell #2 (Plant 2) - Sand Silo

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand silo (pneumatic conveyance/storage system) with baghouse - cell #2	OAC rule 3745-31-05(D)	0.008 tons particulate emissions (PE) per rolling 12-month period based upon sand throughput restrictions (See A.I.2.a)
	OAC rule 3745-31-05(A)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 0.02 lb PE/hr, 0.008 tons PE/year
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity, as a six-minute average, except as provided by rule.

2. Additional Terms and Conditions

2.a Combined annual PE emissions from emissions units P415, P416, P417 and P418 shall not exceed 0.008 tons/yr, based upon a rolling, 12-month restriction of sand throughput (See A.II.1).

2.b All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The maximum annual sand throughput for emissions units P415, P416, P417 and P418 shall not exceed 18,922 tons/yr, combined, based on a rolling 12-month summation of sand throughput.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P415, P416, P417 and P418, combined:

a. the quantity of sand throughput, in tons; and

b. the annual sand throughput, based on a rolling, 12-month summation of the monthly sand throughput.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P415, P416, P417 and P418, combined:

a. the calculated PE emission rate, in tons per month; and

b. the annual PE emission rate, in tons, based on a rolling, 12-month summation of the monthly PE emissions.

3. The permittee shall perform checks when new sand is delivered, for any visible particulate emissions for the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall note the following in the operations log:

a. the color of the emissions;

b. whether the emissions are representative of normal operations;

c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

d. the total duration of any visible emission incident; and

e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual sand throughput restriction and emission limitation per rolling 12-month period.

The deviation reports shall be submitted in accordance with paragraph A.I.c of the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6 month period.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I. of the terms and conditions of this permit shall be determined in accordance with the following methods:

1.a Emission Limitation: 0.008 tons PE per rolling 12-month period for emissions units P415, P416, P417 and P418, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.2.

V. Testing Requirements (continued)

1.b Emission Limitation: 0.02 lbs PE/hr, 0.008 tons PE/yr

Applicable Compliance Method: The hourly emission limitation represents the emission unit's potential to emit based on a maximum outlet concentration 0.005 gr/dscf and a maximum volumetric air flow rate of 500 cfm.

Compliance with the tons/year PE limitation shall be demonstrated through compliance with the rolling 12-month emission limitation.

1.c Emission Limitation: 20 % opacity as a six-minute average, except as provided by rule

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the visible emissions limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND SILO CELL #3 (P417)

Activity Description: LF Cell #3 (Plant 2) - Sand Silo

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand silo (pneumatic conveyance/storage system) with baghouse - cell #3	OAC rule 3745-31-05(D)	0.008 tons particulate emissions (PE) per rolling 12-month period based upon sand throughput restrictions (See A.I.2.a)
	OAC rule 3745-31-05(A)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 0.02 lb PE/hr, 0.008 tons PE/year
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity, as a six-minute average, except as provided by rule.

2. Additional Terms and Conditions

2.a Combined annual PE emissions from emissions units P415, P416, P417 and P418 shall not exceed 0.008 tons/yr, based upon a rolling, 12-month restriction of sand throughput (See A.II.1).

2.b All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The maximum annual sand throughput for emissions units P415, P416, P417 and P418 shall not exceed 18,922 tons/yr, combined, based on a rolling 12-month summation of sand throughput.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P415, P416, P417 and P418, combined:

a. the quantity of sand throughput, in tons; and

b. the annual sand throughput, based on a rolling, 12-month summation of the monthly sand throughput.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P415, P416, P417 and P418, combined:

a. the calculated PE emission rate, in tons per month; and

b. the annual PE emission rate, in tons, based on a rolling, 12-month summation of the monthly PE emissions.

3. The permittee shall perform checks when new sand is delivered, for any visible particulate emissions for the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall note the following in the operations log:

a. the color of the emissions;

b. whether the emissions are representative of normal operations;

c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

d. the total duration of any visible emission incident; and

e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual sand throughput restriction and emission limitation per rolling 12-month period.

The deviation reports shall be submitted in accordance with paragraph A.I.c of the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6 month period.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I. of the terms and conditions of this permit shall be determined in accordance with the following methods:

1.a Emission Limitation: 0.008 tons PE per rolling 12-month period for emissions units P415, P416, P417 and P418, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.2.

V. Testing Requirements (continued)

1.b Emission Limitation: 0.02 lbs PE/hr, 0.008 tons PE/yr

Applicable Compliance Method: The hourly emission limitation represents the emission unit's potential to emit based on a maximum outlet concentration 0.005 gr/dscf and a maximum volumetric air flow rate of 500 cfm.

Compliance with the tons/year PE limitation shall be demonstrated through compliance with the rolling 12-month emission limitation.

1.c Emission Limitation: 20 % opacity as a six-minute average, except as provided by rule

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the visible emissions limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND SILO CELL #4 (P418)

Activity Description: LF Cell #4 (Plant 2) - Sand Silo

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand silo (pneumatic conveyance/storage system) with baghouse - cell #4	OAC rule 3745-31-05(D)	0.008 tons particulate emissions (PE) per rolling 12-month period based upon sand throughput restrictions (See A.I.2.a)
	OAC rule 3745-31-05(A)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 0.02 lb PE/hr, 0.008 tons PE/year
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity, as a six-minute average, except as provided by rule.

2. Additional Terms and Conditions

2.a Combined annual PE emissions from emissions units P415, P416, P417 and P418 shall not exceed 0.008 tons/yr, based upon a rolling, 12-month restriction of sand throughput (See A.II.1).

2.b All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The maximum annual sand throughput for emissions units P415, P416, P417 and P418 shall not exceed 18,922 tons/yr, combined, based on a rolling 12-month summation of sand throughput.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P415, P416, P417 and P418, combined:

a. the quantity of sand throughput, in tons; and

b. the annual sand throughput, based on a rolling, 12-month summation of the monthly sand throughput.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P415, P416, P417 and P418, combined:

a. the calculated PE emission rate, in tons per month; and

b. the annual PE emission rate, in tons, based on a rolling, 12-month summation of the monthly PE emissions.

3. The permittee shall perform checks when new sand is delivered, for any visible particulate emissions for the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall note the following in the operations log:

a. the color of the emissions;

b. whether the emissions are representative of normal operations;

c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

d. the total duration of any visible emission incident; and

e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual sand throughput restriction and emission limitation per rolling 12-month period.

The deviation reports shall be submitted in accordance with paragraph A.I.c of the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6 month period.

V. Testing Requirements

1. Compliance with the emission limitations in section A.I. of the terms and conditions of this permit shall be determined in accordance with the following methods:

1.a Emission Limitation: 0.008 tons PE per rolling 12-month period for emissions units P415, P416, P417 and P418, combined

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.2.

V. Testing Requirements (continued)

1.b Emission Limitation: 0.02 lbs PE/hr, 0.008 tons PE/yr

Applicable Compliance Method: The hourly emission limitation represents the emission unit's potential to emit based on a maximum outlet concentration 0.005 gr/dscf and a maximum volumetric air flow rate of 500 cfm.

Compliance with the tons/year PE limitation shall be demonstrated through compliance with the rolling 12-month emission limitation.

1.c Emission Limitation: 20 % opacity as a six-minute average, except as provided by rule

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with the visible emissions limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND RECLAIM FURN #1 (P419)

Activity Description: LF Cell #1 (Plant 2) - Sand Reclaim Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand reclaim furnace - cell #1	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements (see A.2.a)
	OAC rule 3745-31-05(D)	6.3 tons nitrogen oxides (NOx)/yr (combustion emissions) per rolling 12-month period based on natural gas usage restrictions (see A.I.2.b)
	OAC rule 3745-31-05(A) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21/OAC rule 3745-31-(10-20) OAC rule 3745-17-07(A). Use of baghouse and VOC destruction efficiency (see A.II.1) 0.6 lbs NOx/hr, 2.63 tons NOx/yr 0.5 lbs carbon monoxide (CO)/hr, 2.19 tons CO/yr 0.13 lb volatile organic compounds (VOC)/hr, 0.57 ton VOC/yr (process emissions) (See A.I.2.c) 1.08 lbs particulate emissions (PE)/hr, 4.73 tons PE/yr (process emissions)(See A.I.2.d)
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity as a six minute average, except as provided by rule

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions:

i. furnace equipped with low NOx burners and designed to emit NOx at a rate of 100 lbs/mmCf of natural gas burned.

2.b In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units contained in this permit to install by limiting natural gas usage. Combined annual NOx emissions from emissions units P419, P420, P421, and P422 shall not exceed 6.3 tons/yr based upon a rolling, 12-month summation of natural gas usage. (see A.II.4)

2.c The 0.13 lbs VOC/hr and 1.08 lbs PE/hr emission limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.

2.d All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The permittee shall operate the sand reclaim furnace at a minimum temperature of 1000 degrees Fahrenheit.

2. To ensure proper operation of the emissions unit, the permittee shall employ an "interlock system" that only allows operation of the emissions unit when the minimum temperature is in compliance with the operational restriction in section A.II.1. The "interlock system" shall only allow operation of the emissions unit when the monitoring devices associated with the operational restriction in section A.II.1 are operational (i.e. temperature monitor failure will shutdown the emissions units operation).

3. The pressure drop across the baghouse shall be maintained within the range of 0.5 - 8.0 inches of water while the emissions unit is in operation.

4. The maximum annual natural gas usage for emissions units P419, P420, P421, and P422 shall not exceed 126 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records that document any time periods when the "interlock system" failed to operate in accordance with the requirements in Section A.II.2 of this permit. The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a continuous basis.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall maintain monthly records of the following information for emissions units P419, P420, P421 and P422, combined:

a. the quantity of natural gas combusted, in mmCf; and

b. the annual natural gas usage, based on a rolling, 12-month summation of the monthly natural gas usage.

4. In addition to the above information, the permittee shall also record the following information each month for emissions units P419, P420, P421 and P422, combined:

a. the calculated NOx emission rate, in tons per month; and

b. the annual NOx emission rate, based on a rolling, 12-month summation of the monthly NOx emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify any time period the "interlock system" did not operate in accordance with the requirements specified in Section A.II.2.

2. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods during which the emissions unit was in operation, that the pressure drop across the baghouse did not comply with the allowable range specified above.

3. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restrictions and emission limitation per rolling 12-month period.

4. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO, VOC and PE.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

VOC: Methods 1-4 and either 18, 25, or 25A of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 6.3 tons NOx per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in section A.III.4.

3.b Emission Limitation: 0.6 lbs NOx/hr, 2.63 tons NOx/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated by the monitoring and recordkeeping requirements in section A.III and through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.c Emission Limitation: 0.5 lb CO/hr, 2.19 tons CO/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 0.13 lb VOC/hr, 0.57 ton VOC/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 18, 25, or 25A of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

V. Testing Requirements (continued)

3.e Emission Limitation: 1.08 lbs PE/hr, 4.73 tons PE/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.f Emission Limitation: Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method: OAC rule 3745-17-03(B)(1)

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND RECLAIM FURN #2 (P420)

Activity Description: LF Cell #2 (Plant 2) - Sand Reclaim Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand reclaim furnace - cell #2	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements (see A.2.a)
	OAC rule 3745-31-05(D)	6.3 tons nitrogen oxides (NOx)/yr (combustion emissions) per rolling 12-month period based on natural gas usage restrictions (see A.I.2.b)
	OAC rule 3745-31-05(A) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21/OAC rule 3745-31-(10-20) OAC rule 3745-17-07(A). Use of baghouse and VOC destruction efficiency (see A.II.1) 0.6 lbs NOx/hr, 2.63 tons NOx/yr 0.5 lbs carbon monoxide (CO)/hr, 2.19 tons CO/yr 0.13 lb volatile organic compounds (VOC)/hr, 0.57 ton VOC/yr (process emissions) (See A.I.2.c) 1.08 lbs particulate emissions (PE)/hr, 4.73 tons PE/yr (process emissions)(See A.I.2.d)
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity as a six minute average, except as provided by rule

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions:

i. furnace equipped with low NOx burners and designed to emit NOx at a rate of 100 lbs/mmCf of natural gas burned.

2.b In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units contained in this permit to install by limiting natural gas usage. Combined annual NOx emissions from emissions units P419, P420, P421, and P422 shall not exceed 6.3 tons/yr based upon a rolling, 12-month summation of natural gas usage. (see A.II.4)

2.c The 0.13 lbs VOC/hr and 1.08 lbs PE/hr emission limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.

2.d All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The permittee shall operate the sand reclaim furnace at a minimum temperature of 1000 degrees Fahrenheit.

2. To ensure proper operation of the emissions unit, the permittee shall employ an "interlock system" that only allows operation of the emissions unit when the minimum temperature is in compliance with the operational restriction in section A.II.1. The "interlock system" shall only allow operation of the emissions unit when the monitoring devices associated with the operational restriction in section A.II.1 are operational (i.e. temperature monitor failure will shutdown the emissions units operation).

3. The pressure drop across the baghouse shall be maintained within the range of 0.5 - 8.0 inches of water while the emissions unit is in operation.

4. The maximum annual natural gas usage for emissions units P419, P420, P421, and P422 shall not exceed 126 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records that document any time periods when the "interlock system" failed to operate in accordance with the requirements in Section A.II.2 of this permit. The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a continuous basis.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall maintain monthly records of the following information for emissions units P419, P420, P421 and P422, combined:

a. the quantity of natural gas combusted, in mmCf; and

b. the annual natural gas usage, based on a rolling, 12-month summation of the monthly natural gas usage.

4. In addition to the above information, the permittee shall also record the following information each month for emissions units P419, P420, P421 and P422, combined:

a. the calculated NOx emission rate, in tons per month; and

b. the annual NOx emission rate, based on a rolling, 12-month summation of the monthly NOx emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify any time period the "interlock system" did not operate in accordance with the requirements specified in Section A.II.2.

2. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods during which the emissions unit was in operation, that the pressure drop across the baghouse did not comply with the allowable range specified above.

3. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restrictions and emission limitation per rolling 12-month period.

4. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO, VOC and PE.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

VOC: Methods 1-4 and either 18, 25, or 25A of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 6.3 tons NOx per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in section A.III.4.

3.b Emission Limitation: 0.6 lbs NOx/hr, 2.63 tons NOx/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated by the monitoring and recordkeeping requirements in section A.III and through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.c Emission Limitation: 0.5 lb CO/hr, 2.19 tons CO/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 0.13 lb VOC/hr, 0.57 ton VOC/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 18, 25, or 25A of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

V. Testing Requirements (continued)

3.e Emission Limitation: 1.08 lbs PE/hr, 4.73 tons PE/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.f Emission Limitation: Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method: OAC rule 3745-17-03(B)(1)

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND RECLAIM FURN #3 (P421)

Activity Description: LF Cell #3 (Plant 2) - Sand Reclaim Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand reclaim furnace - cell #3	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements (see A.2.a)
	OAC rule 3745-31-05(D)	6.3 tons nitrogen oxides (NOx)/yr (combustion emissions) per rolling 12-month period based on natural gas usage restrictions (see A.I.2.b)
	OAC rule 3745-31-05(A) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21/OAC rule 3745-31-(10-20) OAC rule 3745-17-07(A). Use of baghouse and VOC destruction efficiency (see A.II.1) 0.6 lbs NOx/hr, 2.63 tons NOx/yr 0.5 lbs carbon monoxide (CO)/hr, 2.19 tons CO/yr 0.13 lb volatile organic compounds (VOC)/hr, 0.57 ton VOC/yr (process emissions) (See A.I.2.c) 1.08 lbs particulate emissions (PE)/hr, 4.73 tons PE/yr (process emissions)(See A.I.2.d)
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity as a six minute average, except as provided by rule

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions:

i. furnace equipped with low NOx burners and designed to emit NOx at a rate of 100 lbs/mmCf of natural gas burned.

2.b In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units contained in this permit to install by limiting natural gas usage. Combined annual NOx emissions from emissions units P419, P420, P421, and P422 shall not exceed 6.3 tons/yr based upon a rolling, 12-month summation of natural gas usage. (see A.II.4)

2.c The 0.13 lbs VOC/hr and 1.08 lbs PE/hr emission limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.

2.d All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The permittee shall operate the sand reclaim furnace at a minimum temperature of 1000 degrees Fahrenheit.

2. To ensure proper operation of the emissions unit, the permittee shall employ an "interlock system" that only allows operation of the emissions unit when the minimum temperature is in compliance with the operational restriction in section A.II.1. The "interlock system" shall only allow operation of the emissions unit when the monitoring devices associated with the operational restriction in section A.II.1 are operational (i.e. temperature monitor failure will shutdown the emissions units operation).

3. The pressure drop across the baghouse shall be maintained within the range of 0.5 - 8.0 inches of water while the emissions unit is in operation.

4. The maximum annual natural gas usage for emissions units P419, P420, P421, and P422 shall not exceed 126 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records that document any time periods when the "interlock system" failed to operate in accordance with the requirements in Section A.II.2 of this permit. The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a continuous basis.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall maintain monthly records of the following information for emissions units P419, P420, P421 and P422, combined:

a. the quantity of natural gas combusted, in mmCf; and

b. the annual natural gas usage, based on a rolling, 12-month summation of the monthly natural gas usage.

4. In addition to the above information, the permittee shall also record the following information each month for emissions units P419, P420, P421 and P422, combined:

a. the calculated NOx emission rate, in tons per month; and

b. the annual NOx emission rate, based on a rolling, 12-month summation of the monthly NOx emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify any time period the "interlock system" did not operate in accordance with the requirements specified in Section A.II.2.

2. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods during which the emissions unit was in operation, that the pressure drop across the baghouse did not comply with the allowable range specified above.

3. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restrictions and emission limitation per rolling 12-month period.

4. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO, VOC and PE.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

VOC: Methods 1-4 and either 18, 25, or 25A of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 6.3 tons NOx per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in section A.III.4.

3.b Emission Limitation: 0.6 lbs NOx/hr, 2.63 tons NOx/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated by the monitoring and recordkeeping requirements in section A.III and through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.c Emission Limitation: 0.5 lb CO/hr, 2.19 tons CO/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 0.13 lb VOC/hr, 0.57 ton VOC/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 18, 25, or 25A of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

V. Testing Requirements (continued)

3.e Emission Limitation: 1.08 lbs PE/hr, 4.73 tons PE/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.f Emission Limitation: Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method: OAC rule 3745-17-03(B)(1)

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: SAND RECLAIM FURN #4 (P422)

Activity Description: LF Cell #4 (Plant 2) - Sand Reclaim Furnace

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sand reclaim furnace - cell #4	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements (see A.2.a)
	OAC rule 3745-31-05(D)	6.3 tons nitrogen oxides (NOx)/yr (combustion emissions) per rolling 12-month period based on natural gas usage restrictions (see A.I.2.b)
	OAC rule 3745-31-05(A) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21/OAC rule 3745-31-(10-20) OAC rule 3745-17-07(A). Use of baghouse and VOC destruction efficiency (see A.II.1) 0.6 lbs NOx/hr, 2.63 tons NOx/yr 0.5 lbs carbon monoxide (CO)/hr, 2.19 tons CO/yr 0.13 lb volatile organic compounds (VOC)/hr, 0.57 ton VOC/yr (process emissions) (See A.I.2.c) 1.08 lbs particulate emissions (PE)/hr, 4.73 tons PE/yr (process emissions)(See A.I.2.d)
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity as a six minute average, except as provided by rule

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions:

i. furnace equipped with low NOx burners and designed to emit NOx at a rate of 100 lbs/mmCf of natural gas burned.

2.b In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units contained in this permit to install by limiting natural gas usage. Combined annual NOx emissions from emissions units P419, P420, P421, and P422 shall not exceed 6.3 tons/yr based upon a rolling, 12-month summation of natural gas usage. (see A.II.4)

2.c The 0.13 lbs VOC/hr and 1.08 lbs PE/hr emission limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.

2.d All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The permittee shall operate the sand reclaim furnace at a minimum temperature of 1000 degrees Fahrenheit.

2. To ensure proper operation of the emissions unit, the permittee shall employ an "interlock system" that only allows operation of the emissions unit when the minimum temperature is in compliance with the operational restriction in section A.II.1. The "interlock system" shall only allow operation of the emissions unit when the monitoring devices associated with the operational restriction in section A.II.1 are operational (i.e. temperature monitor failure will shutdown the emissions units operation).

3. The pressure drop across the baghouse shall be maintained within the range of 0.5 - 8.0 inches of water while the emissions unit is in operation.

4. The maximum annual natural gas usage for emissions units P419, P420, P421, and P422 shall not exceed 126 mmCf/yr, combined, based upon a rolling, 12-month summation of natural gas usage.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records that document any time periods when the "interlock system" failed to operate in accordance with the requirements in Section A.II.2 of this permit. The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

2. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a continuous basis.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall maintain monthly records of the following information for emissions units P419, P420, P421 and P422, combined:

a. the quantity of natural gas combusted, in mmCf; and

b. the annual natural gas usage, based on a rolling, 12-month summation of the monthly natural gas usage.

4. In addition to the above information, the permittee shall also record the following information each month for emissions units P419, P420, P421 and P422, combined:

a. the calculated NOx emission rate, in tons per month; and

b. the annual NOx emission rate, based on a rolling, 12-month summation of the monthly NOx emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify any time period the "interlock system" did not operate in accordance with the requirements specified in Section A.II.2.

2. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods during which the emissions unit was in operation, that the pressure drop across the baghouse did not comply with the allowable range specified above.

3. The permittee shall submit deviation (excursion) reports which identify exceedances of the annual natural gas usage restrictions and emission limitation per rolling 12-month period.

4. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO, VOC and PE.

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

VOC: Methods 1-4 and either 18, 25, or 25A of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

3.a Emission Limitation: 6.3 tons NOx per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in section A.III.4.

3.b Emission Limitation: 0.6 lbs NOx/hr, 2.63 tons NOx/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated by the monitoring and recordkeeping requirements in section A.III and through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.c Emission Limitation: 0.5 lb CO/hr, 2.19 tons CO/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 0.13 lb VOC/hr, 0.57 ton VOC/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 18, 25, or 25A of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

V. Testing Requirements (continued)

3.e Emission Limitation: 1.08 lbs PE/hr, 4.73 tons PE/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.f Emission Limitation: Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method: OAC rule 3745-17-03(B)(1)

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: RECEIVING FURN #1 (P423)

Activity Description: (Plant 2) - Receiving Furnace #1

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
receiving furnace #1 (R1-2)	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements See A.I.2.a
	OAC rule 3745-31-05(D)	9.18 tons NOx per rolling 12-month period based upon natural gas usage restrictions See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21/OAC rule 3745-31-(10-20). 0.82 lb NOx/hr, 3.59 tons NOx/yr 0.81 lb carbon monoxide (CO)/hr, 3.55 tons CO/yr 24.45 lbs particulate emissions (PE)/day, 4.46 tons PE/yr (holding, fluxing, & drossing) 2.5 lbs hydrogen fluoride (HF)/hr, 0.5 ton HF/yr
	OAC rule 3745-17-11(B)	See A.I.2.b
	OAC rule 3745-17-07(A)	See A.I.2.c.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions:

i furnaced designed with Low NOx burners and designed to emit NOx at a rate of 85 pounds NOx/mmCf of natural gas burned.

2.b The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 lbs/hr. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(ii), this emissions unit is exempt from the requirements of OAC rule 3745-17-11(B)(2).

2.c This emissions unit is exempt from the visible PE limitations specified in OAC rule 3745-17-07(A) pursuant to OAC rule 3745-17-07(A)(3)(h) because OAC rule 3745-17-11 is not applicable.

2.d In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units by limiting natural gas usage. Combined annual NOx emissions from emissions units P423, P424, P426, and P427 shall not exceed 9.18 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.1).

2.e The 0.82 lbs NOx/hr and 0.81 lbs CO/hr emissions limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.

2.f All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The maximum annual natural gas usage for emissions units P423, P424, P426, and P427 shall not exceed 216 mmCf, combined, based upon a rolling, 12-month summation of natural gas usage.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P423, P424, P426, and P427:

a. the quantity of natural gas combusted, in mmCf; and

b. the annual natural gas usage, based on a rolling, 12-month summation of the monthly natural gas usage.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P423, P424, P426, and P427:

a. the calculated NOx emission rate, in tons per month; and

b. the annual NOx emission rate, based on a rolling, 12-month summation of the monthly NOx emissions.

3. The permittee shall maintain daily records of the following information for this emissions unit:

a. manufacturers identification of the fluxing agent used;

b. the duration of fluxing time, in hours; and

c. the identification number of furnaces fluxed within the same hour.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances the annual natural gas usage restrictions and emission limitation per rolling 12-month period.

2. The permittee shall submit deviation (excursion) reports when the fluxing or drossing operations on any day exceeds one hour.

3. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO, and for PE by confirming company supplied emission rates for: holding (0.875 lbs PE/hr-holding), fluxing (1.545 lbs PE/hr-fluxing), and drossing (3.655 lbs PE/hr-drossing); See V.3.d..

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

Test Method 5 shall be performed for each of the following operating conditions: i. holding, ii. fluxing, and iii. drossing.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

3.a Emission Limitation: 9.18 tons NOx per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.2.

3.b Emission Limitation: 0.82 lb NOx/hr, 3.59 tons NOx/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.c Emission Limitation: 0.81 lb CO/hr, 3.55 tons CO/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 24.45 lbs PE/day, 4.46 tons PE/yr

Applicable Compliance Method: The lb PE/day represents the potential to emit for this emissions unit based on the additive maximum pound/hr of the following operations and the maximum duration of the operation: holding (0.875 lb PE/hr, 22 hrs/day), fluxing (1.545 lb PE/hr, 1 hr/day) and drossing (3.655 lbs PE/hr, 1 hr/day). Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 365 days/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.e Emission Limitation: 4.21 lbs HF/hr, 0.1 ton HF/yr

Applicable Compliance Method: The lbs HF/hr represents the potential to emit for this emissions unit determined by multiplying the maximum amount of cleaning flux (60 lbs) by the HF content of the fluxing agent (0.319 lb HF/lb flux) by the emission factor (0.13 lb HF emitted/lb HF).

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of once per day (24 hour period), 365 days/year and dividing by 2000 lbs/ton.

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: RECEIVING FURN #2 (P424)

Activity Description: (Plant 2) - Receiving Furnace #2

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
receiving furnace #2 (R2-3)	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements See A.I.2.a
	OAC rule 3745-31-05(D)	9.18 tons NOx per rolling 12-month period based upon natural gas usage restrictions See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21/OAC rule 3745-31-(10-20). 0.82 lb NOx/hr, 3.59 tons NOx/yr 0.81 lb carbon monoxide (CO)/hr, 3.55 tons CO/yr 24.45 lbs particulate emissions (PE)/day, 4.46 tons PE/yr (holding, fluxing, & drossing) 2.5 lbs hydrogen fluoride (HF)/hr, 0.5 ton HF/yr
	OAC rule 3745-17-11(B)	See A.I.2.b
	OAC rule 3745-17-07(A)	See A.I.2.c.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions:

i furnaced designed with Low NOx burners and designed to emit NOx at a rate of 85 pounds NOx/mmCf of natural gas burned.

2.b The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 lbs/hr. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(ii), this emissions unit is exempt from the requirements of OAC rule 3745-17-11(B)(2).

2.c This emissions unit is exempt from the visible PE limitations specified in OAC rule 3745-17-07(A) pursuant to OAC rule 3745-17-07(A)(3)(h) because OAC rule 3745-17-11 is not applicable.

2.d In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units by limiting natural gas usage. Combined annual NOx emissions from emissions units P423, P424, P426, and P427 shall not exceed 9.18 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.1).

2.e The 0.82 lbs NOx/hr and 0.81 lbs CO/hr emissions limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.

2.f All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The maximum annual natural gas usage for emissions units P423, P424, P426, and P427 shall not exceed 216 mmCf, combined, based upon a rolling, 12-month summation of natural gas usage.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P423, P424, P426, and P427:

a. the quantity of natural gas combusted, in mmCf; and

b. the annual natural gas usage, based on a rolling, 12-month summation of the monthly natural gas usage.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P423, P424, P426, and P427:

a. the calculated NOx emission rate, in tons per month; and

b. the annual NOx emission rate, based on a rolling, 12-month summation of the monthly NOx emissions.

3. The permittee shall maintain daily records of the following information for this emissions unit:

a. manufacturers identification of the fluxing agent used;

b. the duration of fluxing time, in hours; and

c. the identification number of furnaces fluxed within the same hour.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances the annual natural gas usage restrictions and emission limitation per rolling 12-month period.

2. The permittee shall submit deviation (excursion) reports when the fluxing or drossing operations on any day exceeds one hour.

3. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO, and for PE by confirming company supplied emission rates for: holding (0.875 lbs PE/hr-holding), fluxing (1.545 lbs PE/hr-fluxing), and drossing (3.655 lbs PE/hr-drossing); See V.3.d..

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

Test Method 5 shall be performed for each of the following operating conditions: i. holding, ii. fluxing, and iii. drossing.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

3.a Emission Limitation: 9.18 tons NOx per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.2.

3.b Emission Limitation: 0.82 lb NOx/hr, 3.59 tons NOx/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.c Emission Limitation: 0.81 lb CO/hr, 3.55 tons CO/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 24.45 lbs PE/day, 4.46 tons PE/yr

Applicable Compliance Method: The lb PE/day represents the potential to emit for this emissions unit based on the additive maximum pound/hr of the following operations and the maximum duration of the operation: holding (0.875 lb PE/hr, 22 hrs/day), fluxing (1.545 lb PE/hr, 1 hr/day) and drossing (3.655 lbs PE/hr, 1 hr/day). Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 365 days/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.e Emission Limitation: 4.21 lbs HF/hr, 0.1 ton HF/yr

Applicable Compliance Method: The lbs HF/hr represents the potential to emit for this emissions unit determined by multiplying the maximum amount of cleaning flux (60 lbs) by the HF content of the fluxing agent (0.319 lb HF/lb flux) by the emission factor (0.13 lb HF emitted/lb HF).

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of once per day (24 hour period), 365 days/year and dividing by 2000 lbs/ton.

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HOLDING FURN #1 (P426)

Activity Description: (Plant 2) - Holding Furnace #1

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
holding furnace #1 (H1-2)	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements See A.I.2.a
	OAC rule 3745-31-05(D)	9.18 tons NOx per rolling 12-month period based upon natural gas usage restrictions See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21/OAC rule 3745-31-(10-20). 0.82 lb NOx/hr, 3.59 tons NOx/yr 0.81 lb carbon monoxide (CO)/hr, 3.55 tons CO/yr 24.45 lbs particulate emissions (PE)/day, 4.46 tons PE/yr (holding, fluxing, & drossing) 2.5 lbs hydrogen fluoride (HF)/hr, 0.5 ton HF/yr
	OAC rule 3745-17-11(B)	See A.I.2.b
	OAC rule 3745-17-07(A)	See A.I.2.c.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions:

i furnaced designed with Low NOx burners and designed to emit NOx at a rate of 85 pounds NOx/mmCf of natural gas burned.

2.b The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 lbs/hr. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(ii), this emissions unit is exempt from the requirements of OAC rule 3745-17-11(B)(2).

2.c This emissions unit is exempt from the visible PE limitations specified in OAC rule 3745-17-07(A) pursuant to OAC rule 3745-17-07(A)(3)(h) because OAC rule 3745-17-11 is not applicable.

2.d In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units by limiting natural gas usage. Combined annual NOx emissions from emissions units P423, P424, P426, and P427 shall not exceed 9.18 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.1).

2.e The 0.82 lbs NOx/hr and 0.81 lbs CO/hr emissions limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.

2.f All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The maximum annual natural gas usage for emissions units P423, P424, P426, and P427 shall not exceed 216 mmCf, combined, based upon a rolling, 12-month summation of natural gas usage.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P423, P424, P426, and P427:

a. the quantity of natural gas combusted, in mmCf; and

b. the annual natural gas usage, based on a rolling, 12-month summation of the monthly natural gas usage.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P423, P424, P426, and P427:

a. the calculated NOx emission rate, in tons per month; and

b. the annual NOx emission rate, based on a rolling, 12-month summation of the monthly NOx emissions.

3. The permittee shall maintain daily records of the following information for this emissions unit:

a. manufacturers identification of the fluxing agent used;

b. the duration of fluxing time, in hours; and

c. the identification number of furnaces fluxed within the same hour.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances the annual natural gas usage restrictions and emission limitation per rolling 12-month period.

2. The permittee shall submit deviation (excursion) reports when the fluxing or drossing operations on any day exceeds one hour.

3. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO, and for PE by confirming company supplied emission rates for: holding (0.875 lbs PE/hr-holding), fluxing (1.545 lbs PE/hr-fluxing), and drossing (3.655 lbs PE/hr-drossing); See V.3.d..

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

Test Method 5 shall be performed for each of the following operating conditions: i. holding, ii. fluxing, and iii. drossing.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

3.a Emission Limitation: 9.18 tons NOx per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.2.

3.b Emission Limitation: 0.82 lb NOx/hr, 3.59 tons NOx/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.c Emission Limitation: 0.81 lb CO/hr, 3.55 tons CO/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 24.45 lbs PE/day, 4.46 tons PE/yr

Applicable Compliance Method: The lb PE/day represents the potential to emit for this emissions unit based on the additive maximum pound/hr of the following operations and the maximum duration of the operation: holding (0.875 lb PE/hr, 22 hrs/day), fluxing (1.545 lb PE/hr, 1 hr/day) and drossing (3.655 lbs PE/hr, 1 hr/day). Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 365 days/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.e Emission Limitation: 4.21 lbs HF/hr, 0.1 ton HF/yr

Applicable Compliance Method: The lbs HF/hr represents the potential to emit for this emissions unit determined by multiplying the maximum amount of cleaning flux (60 lbs) by the HF content of the fluxing agent (0.319 lb HF/lb flux) by the emission factor (0.13 lb HF emitted/lb HF).

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of once per day (24 hour period), 365 days/year and dividing by 2000 lbs/ton.

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HOLDING FURN #2 (P427)

Activity Description: (Plant 2) - Holding Furnace #2

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
holding furnace #2 (H2-3)	40 CFR Part 52.21 OAC rule 3745-31-(10-20)	control requirements See A.I.2.a
	OAC rule 3745-31-05(D)	9.18 tons NOx per rolling 12-month period based upon natural gas usage restrictions See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21/OAC rule 3745-31-(10-20). 0.82 lb NOx/hr, 3.59 tons NOx/yr 0.81 lb carbon monoxide (CO)/hr, 3.55 tons CO/yr 24.45 lbs particulate emissions (PE)/day, 4.46 tons PE/yr (holding, fluxing, & drossing) 2.5 lbs hydrogen fluoride (HF)/hr, 0.5 ton HF/yr
	OAC rule 3745-17-11(B)	See A.I.2.b
	OAC rule 3745-17-07(A)	See A.I.2.c.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for control of NOx emissions:

i furnaced designed with Low NOx burners and designed to emit NOx at a rate of 85 pounds NOx/mmCf of natural gas burned.

2.b The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 lbs/hr. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(ii), this emissions unit is exempt from the requirements of OAC rule 3745-17-11(B)(2).

2.c This emissions unit is exempt from the visible PE limitations specified in OAC rule 3745-17-07(A) pursuant to OAC rule 3745-17-07(A)(3)(h) because OAC rule 3745-17-11 is not applicable.

2.d In order to comply with Prevention of Significant Deterioration (PSD) Significant Impact Increment requirement for NOx, the permittee has requested federally enforceable restrictions to limit the potential to emit from the emissions units by limiting natural gas usage. Combined annual NOx emissions from emissions units P423, P424, P426, and P427 shall not exceed 9.18 tons/yr, based upon a rolling, 12-month restriction of natural gas usage (See A.II.1).

2.e The 0.82 lbs NOx/hr and 0.81 lbs CO/hr emissions limitations were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.

2.f All PE is assumed to be in the form of PM10.

II. Operational Restrictions

1. The maximum annual natural gas usage for emissions units P423, P424, P426, and P427 shall not exceed 216 mmCf, combined, based upon a rolling, 12-month summation of natural gas usage.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall maintain monthly records of the following information for emissions units P423, P424, P426, and P427:

a. the quantity of natural gas combusted, in mmCf; and

b. the annual natural gas usage, based on a rolling, 12-month summation of the monthly natural gas usage.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P423, P424, P426, and P427:

a. the calculated NOx emission rate, in tons per month; and

b. the annual NOx emission rate, based on a rolling, 12-month summation of the monthly NOx emissions.

3. The permittee shall maintain daily records of the following information for this emissions unit:

a. manufacturers identification of the fluxing agent used;

b. the duration of fluxing time, in hours; and

c. the identification number of furnaces fluxed within the same hour.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify exceedances the annual natural gas usage restrictions and emission limitation per rolling 12-month period.

2. The permittee shall submit deviation (excursion) reports when the fluxing or drossing operations on any day exceeds one hour.

3. The deviation (excursion) reports shall be submitted in accordance with General Term and Condition A.I.c.ii of this permit.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements

a. The emissions testing shall be conducted within 6 months after issuance of this permit.

b. The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO, and for PE by confirming company supplied emission rates for: holding (0.875 lbs PE/hr-holding), fluxing (1.545 lbs PE/hr-fluxing), and drossing (3.655 lbs PE/hr-drossing); See V.3.d..

c. The following test method shall be employed to demonstrate compliance with the allowable mass emission rate(s):

NOx: Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

CO: Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

PE: Method 1-5 of 40 CFR Part 60, Appendix A.

Test Method 5 shall be performed for each of the following operating conditions: i. holding, ii. fluxing, and iii. drossing.

d. The test shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

3. Compliance with the emission limitations specified in Section A.I.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

V. Testing Requirements (continued)

3.a Emission Limitation: 9.18 tons NOx per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling 12-month emission limitation shall be demonstrated by the recordkeeping requirements specified in sections A.III.2.

3.b Emission Limitation: 0.82 lb NOx/hr, 3.59 tons NOx/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.c Emission Limitation: 0.81 lb CO/hr, 3.55 tons CO/yr

Applicable Compliance Method: Compliance with the lb/hr limitation shall be determined through the testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Ongoing compliance with the lb/hr limitation shall be demonstrated through emission testing in accordance with Ohio EPA, Office of Air Pollution Control, Division of Engineering, Engineering Guide #16.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 8760 hours/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.d Emission Limitation: 24.45 lbs PE/day, 4.46 tons PE/yr

Applicable Compliance Method: The lb PE/day represents the potential to emit for this emissions unit based on the additive maximum pound/hr of the following operations and the maximum duration of the operation: holding (0.875 lb PE/hr, 22 hrs/day), fluxing (1.545 lb PE/hr, 1 hr/day) and drossing (3.655 lbs PE/hr, 1 hr/day). Compliance with the lbs/hr limitation shall be determined through the testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A.

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of 365 days/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

3.e Emission Limitation: 4.21 lbs HF/hr, 0.1 ton HF/yr

Applicable Compliance Method: The lbs HF/hr represents the potential to emit for this emissions unit determined by multiplying the maximum amount of cleaning flux (60 lbs) by the HF content of the fluxing agent (0.319 lb HF/lb flux) by the emission factor (0.13 lb HF emitted/lb HF).

The tons/yr emission limitation was developed by multiplying the lb/hr limitation by the maximum operating schedule of once per day (24 hour period), 365 days/year and dividing by 2000 lbs/ton.

VI. Miscellaneous Requirements

1. Prevention of Significant Deterioration (PSD)

This source is subject to the applicable provisions of the PSD regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21, and the Ohio air permitteing rule attainment provisions, OAC rules 3745-31-10 through 20. The Ohio Environmental Protection Agency has been granted approval to apply and enforce the PSD regulations. The terms and conditon of this permit and the requirements of the PSD regulations are enforceable by the United States Environmental Protection Agency.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR3 CB CORE MACH 119 (P430)

Activity Description: CR3 (Plant 1) - Core Cold Box #119

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.119 (loramendi cell no.8) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 5.36 lbs OC/hr, 4.93 tons OC/year 1.12 lbs PE/hr, 1.01 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH 120 (P434)

Activity Description: (Plant 1) - Core Cold Box #120

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.120 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 2.75 lbs OC/hr, 2.54 tons OC/year 0.58 lbs PE/hr, 0.52 tons PE/yr Visible PE from the stack(s) servicing this emissions unit shall not exceed 10% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-07(A)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

II. Operational Restrictions (continued)

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 2.75 lbs OC/hr, 2.54 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3240 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 8100 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 0.58 lbs PE/hr, 0.52 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3240 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 8100 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 10% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation using U.S. EPA Method 9, which is located in 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH 121 (P435)

Activity Description: (Plant 1) - Core Cold Box #121

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.121 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 2.75 lbs OC/hr, 2.54 tons OC/year 0.58 lbs PE/hr, 0.52 tons PE/yr Visible PE from the stack(s) servicing this emissions unit shall not exceed 10% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-07(A)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

II. Operational Restrictions (continued)

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 2.75 lbs OC/hr, 2.54 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3240 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 8100 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 0.58 lbs PE/hr, 0.52 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3240 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 8100 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 10% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation using U.S. EPA Method 9, which is located in 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH 122 (P436)

Activity Description: (Plant 1) - Core Cold Bbox #122

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.122 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 1.84 lbs OC/hr, 1.69 tons OC/year 0.38 lbs PE/hr, 0.35 tons PE/yr Visible PE from the stack(s) servicing this emissions unit shall not exceed 10% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-07(A)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

II. Operational Restrictions (continued)

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 1.84 lbs OC/hr, 1.69 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 2160 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 5400 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 0.38 lbs PE/hr, 0.35 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 2160 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 5400 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 10% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation using U.S. EPA Method 9, which is located in 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #123 (P437)

Activity Description: (Plant 1) - Core Hot Box #123

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.123, core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 17.94 lbs OC/hr, 15.43 tons OC/year (includes conveyor emissions) 2.11 lbs PE/hr, 1.34 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 17.94 lbs OC/hr, 15.43 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3500 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 8750 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 2.11lbs PE/hr, 1.34 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3500 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 8750 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #124 (P438)

Activity Description: (Plant 1) - Core Hot Box #124

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.124, sand core mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 17.94 lbs OC/hr, 15.43 tons OC/year (includes conveyor emissions) 2.11 lbs PE/hr, 1.34 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 17.94 lbs OC/hr, 15.43 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3500 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 8750 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 2.11lbs PE/hr, 1.34 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3500 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 8750 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #10 (P439)

Activity Description: (Plant 1) - Core Hot Box #10

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.10, core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 17.94 lbs OC/hr, 15.43 tons OC/year (includes conveyor emissions) 2.11 lbs PE/hr, 1.34 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 17.94 lbs OC/hr, 15.43 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3500 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 8750 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 2.11lbs PE/hr, 1.34 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 3500 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 8750 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #34-35 (P440)

Activity Description: CR3 (Plant 1) - Core Hot Box #34-35

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.34/35 (two station machine), core sand mixer and associated coveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 29.73 lbs OC/hr, 25.56 tons OC/year (includes conveyor emissions) 3.50 lbs PE/hr, 2.22 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: HB CORE MACH #36-37 (P441)

Activity Description: CR3 (Plant 1) - Core Hot Box #36-37

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
hot box core machine no.36/37, core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 29.73 lbs OC/hr, 25.56 tons OC/year (includes conveyor emissions) 3.50 lbs PE/hr, 2.22 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)&(2)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

2.e The core sand mixer portion of this emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Also, the liquid organic material/substance containing liquid organic material in the hot box core machine portion of this emissions unit does not come into contact with a flame and is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

III. Monitoring and/or Record Keeping Requirements (continued)

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001l, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by an emission factor of 0.005125 lb OC/lb sand (sum of hot box core emission factor, 0.004932 and conveyor emission factor, 0.000193). The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission factor of 0.001763 ton OC/ton of sand (sum of hot box core emission factor, 0.001347 and hot box conveyor emission factor, 0.000416).

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 5800 lbs/hr by the an emission factor of 0.000604 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 14,500 tons/yr by an emission rate of 0.000153 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR1 CB CORE MACH #55 (P442)

Activity Description: CR1 (Plant 1) - Core Cold Box #55

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.55 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 3.83 lbs OC/hr, 3.52 tons OC/year 0.80 lbs PE/hr, 0.72 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 3.83 lbs OC/hr, 3.52 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4500 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 11,250 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 0.80 lbs PE/hr, 0.72 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4500 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 11,250 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR1 CB CORE MACH #56 (P443)

Activity Description: CR1 (Plant 1) - Core Cold Box #56

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.56 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 3.83 lbs OC/hr, 3.52 tons OC/year 0.80 lbs PE/hr, 0.72 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 3.83 lbs OC/hr, 3.52 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4500 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 11,250 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 0.80 lbs PE/hr, 0.72 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4500 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 11,250 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR1 CB CORE MACH #57 (P444)

Activity Description: CR1 (Plant 1) - Core Cold Box #57

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.57 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 3.83 lbs OC/hr, 3.52 tons OC/year 0.80 lbs PE/hr, 0.72 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 3.83 lbs OC/hr, 3.52 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4500 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 11,250 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 0.80 lbs PE/hr, 0.72 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4500 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 11,250 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR1 CB CORE MACH #58 (P445)

Activity Description: CR1 (Plant 1) - Core Cold Box #58

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.58 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 3.83 lbs OC/hr, 3.52 tons OC/year 0.80 lbs PE/hr, 0.72 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 3.83 lbs OC/hr, 3.52 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4500 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 11,250 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 0.80 lbs PE/hr, 0.72 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4500 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 11,250 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR1 CB CORE MACH #59 (P446)

Activity Description: CR1 (Plant 1) - Core Cold Box #59

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.59 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 3.83 lbs OC/hr, 3.52 tons OC/year 0.80 lbs PE/hr, 0.72 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 3.83 lbs OC/hr, 3.52 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4500 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 11,250 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 0.80 lbs PE/hr, 0.72 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4500 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 11,250 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR1 CB CORE MACH #61 (P447)

Activity Description: CR1 (Plant 1) - Core Cold Box #61

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no.61 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 5.36 lbs OC/hr, 4.93 tons OC/year 1.12 lbs PE/hr, 1.01 tons PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 6300 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 15,750 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR7 OVEN - #9 CORE (P448)

Activity Description: CR7 (Plant 1) - Core Dip Drying Oven #2

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven no.9	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 tons PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxide (NOx)/hr, 1.60 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

2.e The liquid organic material in this emissions unit does not come into contact wit a flame or is not baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations from this rule.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 25,200 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 41,226 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 9778 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 31.99 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR3 OVEN - #10 CORE (P449)

Activity Description: CR3 (Plant 1) - Core Dip Drying Oven (X5-3)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven no. 10	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 3.69 lbs OC/hr, 3.05 tons OC/year 1.18 lbs PE/hr, 0.82 tons PE/yr 0.49 lb nitrogen oxide (NOx)/hr, 0.80 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

2.e The liquid organic material/substance containing liquid organic material in this emissions unit does not come into contact with a flame nor is it baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

V. Testing Requirements (continued)

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 3.69 lbs OC/hr, 3.05 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 12,600 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 20,613 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 1.18 lbs PE/hr, 0.82 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 12,600 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 20,613 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

1.f Emission Limitation: 0.49 lb NOx/hr, 0.80 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 4889 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 16 mm scf by the AP 42 emission factor.

1.g Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR1 OVEN - #11 CORE (P450)

Activity Description: CR1 (Plant 1) - Core Dip Drying Oven (X5-5)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven no. 11	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 7.65 lbs OC/hr, 6.32 tons OC/year 2.45 lbs PE/hr, 1.69 tons PE/yr 0.85 lb carbon monoxide (CO)/hr, 1.39 tons CO/yr 1.01 lb nitrogen oxide (NOx)/hr, 1.66 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

2.e The liquid organic material/substance containing liquid organic material in this emissions unit does not come into contact with a flame nor is it baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 7.65 lbs OC/hr, 6.32 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,100 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 42,698 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 2.45 lbs PE/hr, 1.69 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 26,100 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 42,698 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: 0.85 lb CO/hr, 1.39 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 10,127 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 33.13 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 1.01 lb NOx/hr, 1.66 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 10,127 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 33.13 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CR1 OVEN - #12 CORE (P451)

Activity Description: CR1 (Plant 1) - Core Dip Drying

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
core oven no. 12	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 6.33 lbs OC/hr, 5.23 tons OC/year 2.03 lbs PE/hr, 1.40 tons PE/yr 0.70 lb carbon monoxide (CO)/hr, 1.15 tons CO/yr 0.84 lb nitrogen oxide (NOx)/hr, 1.37 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)	See A.I.2.e.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology " (BAT) has been determined to be the use of natural gas in this emissions unit.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

2.d The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with best available technology requirements established pursuant to OAC rule 3745-21-05(A)(3) in this permit to install.

2.e The liquid organic material/substance containing liquid organic material in this emissions unit does not come into contact with a flame nor is it baked, heat-cured, or heat-polymerized, in the presence of oxygen. Therefore, there are no applicable emission limitations established by this rule.

II. Operational Restrictions

1.a The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month	Maximum Cumulative Sand Processed (tons)
1	83,725
1-2	167,450
1-3	251,175
1-4	334,900
1-5	418,625
1-6	502,350
1-7	586,075
1-8	669,800
1-9	753,525
1-10	837,250
1-11	920,975
1-12	1,024,555

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed *(0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall perform weekly checks, when the Plant 1 core room is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

3.a the color of the emissions;

3.b the total duration of any visible emission observation;

3.c identification of the stack(s) and associated emissions unit(s); and

3.d any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission observations under item (b) above or continue the check until the incident has ended. The observer may indicate that the visible emissions were continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction; and

IV. Reporting Requirements (continued)

1.c the rolling, 12-month emission limitations for PE and OC.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 6.33 lbs OC/hr, 5.23 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 21,600 lbs/hr by an emission factor of 0.000293 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 35,336 tons/yr by an emission factor of 0.000148 ton OC/ton of sand.

1.e Emission Limitation: 2.03 lbs PE/hr, 1.40 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 21,600 lbs/hr by the an emission factor of 0.000094 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 35,336 tons/yr by an emission rate of 0.0000396 ton PE/ton of sand.

V. Testing Requirements (continued)

1.f Emission Limitation: 0.70 lb CO/hr, 1.15 tons CO/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 10 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 8381 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (84 lbs CO/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 27.42 mm scf by the AP 42 emission factor.

1.g Emission Limitation: 0.84 lb NOx/hr, 1.37 tons NOx/yr

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Method 1-4 & 7 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying maximum hourly natural gas usage rate of 8381 scf/hr by the AP42 emission factor, Table 1-4.1 Revised 7/98 (100 lbs NOx/mm scf). The maximum annual emission limitation is calculated by multiplying the calculated maximum annual gas usage of 27.42 mm scf by the AP 42 emission factor.

1.h Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required compliance shall be demonstrated in accordance with OAC rule 3745-17-03(B).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH #125 (P452)

Activity Description: (Plant 1) - Core Cold Box #125

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no. 125 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 3.61 lbs OC/hr, 3.33 tons OC/year 0.76 lbs PE/hr, 0.68 tons PE/yr Visible PE from the stack(s) servicing this emissions unit shall not exceed 10% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-07(A)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

II. Operational Restrictions (continued)

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 3.61 lbs OC/hr, 3.33 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4250 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 10,625 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 0.76 lbs PE/hr, 0.68 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4250 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 10,625 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 10% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation using U.S. EPA Method 9, which is located in 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: CB CORE MACH #126 (P453)

Activity Description: (Plant 1) - Core Cold Box #126

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
cold box core machine no. 126 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). 1207.90 tons of organic compounds (OC) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a. 3.61 lbs OC/hr, 3.33 tons OC/year 0.76 lbs PE/hr, 0.68 tons PE/yr Visible PE from the stack(s) servicing this emissions unit shall not exceed 10% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-07(A)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-11(B)	The emission limitation established by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas emissions shall be vented to a sulfuric acid scrubber that is designed and operated to removed at least 98 percent, by weight, of the catalyst gas emissions.

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, collectively: P122, P184, P211, P212, P213, P233, P292, P297, P298, P299, P302, P320, P321, P322, P323, P324, P325, P329, P330, P331, P332, P333, P334, P335, P336, P337, P338, P339, P340, P352, P353, P354, P355, P356, P358, P361, P369, P370, P371, P372, P373, P374, P375, P376, P377, P378, P379, P383, P384, P385, P386, P387, P388, P390, P394, P395, P396, P397, P398, P399, P401, P402, P403, P404, P405, P406, P430, P434, P435, P436, P437, P438, P439, P440, P441, P442, P443, P444, P445, P446, P447, P448, P449, P450, P451, P452 and P453. These emissions unit comprise the Plant 1 core room operations.

2.b "Best Available Technology" (BAT) has been determined to be the use of a catalyst gas scrubber designed for the control of catalyst gas on cold box core machines.

2.c For the purposes of federal enforceability emission limitations on OC effectively restrict emissions of volatile organic compounds (VOC).

II. Operational Restrictions

1. The annual sand processed for the Plant 1core room operations (i.e. all the emissions units listed in A.I.2.a) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of sand throughput.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of PTI 03-14001, the permittee shall not exceed the sand process levels specified in the following table:

Month Maximum Cumulative
Sand Processed (tons)
1 83,725
1-2 167,450
1-3 251,175
1-4 334,900
1-5 418,625
1-6 502,350
1-7 586,075
1-8 669,800
1-9 753,525
1-10 837,250
1-11 920,975
1-12 1,024,555

After the first 12 calendar months of operation following the issuance of PTI 03-14001, compliance with the annual sand restriction shall be based upon a rolling 12-month summation of monthly sand processed.

2. The pH and liquor flow rate of the catalyst gas scrubbers shall be maintained at the following levels:

2.a the catalyst gas scrubber liquor pH shall be continuously maintained at or below 5 while the emissions unit is in operation; and

II. Operational Restrictions (continued)

2.b the catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of 3 to 5 gallons per minute per 1,000 cubic feet per minute (cfm) of gas flow at all time while the emissions unit is in operation.

3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquid pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following each month for the Plant 1 core room operations (i.e. all the emissions units listed in A.I.2.a):

1.a the total sand processed, in tons;

1.b for the first 12 months of operation following the issuance of this PTI 03-14001, the cumulative sand processed, in tons; and

1.c after the first 12 months operation following the issuance of PTI 03-14001, the sand processed, in tons, based on a rolling, 12-month summation of the sand processed.

2. In addition to the above information, the permittee shall also record the following information each month for all the emissions units listed in A.I.2.a:

2.a the quantity of sand processed in the hot box core machines (i.e. the amount of 1.a used in the hot box core machines), in tons;

2.b the quantity of sand processed in the cold box core machines (i.e. the amount of 1.a used in the cold box core machines), in tons;

2.c the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = (2.a)(Q + R) + (2.b) (S) + (1.a)(T)

where:

TOCE = total organic compound emissions, in tons

Q = OC emission factor, in ton OC/ton sand processed *(0.001347 ton OC/ton sand), for hot box core machine operations

R = OC emission factor, in ton OC/ton sand processed *(0.000416 ton OC/ton sand), for hot box conveyors

S = OC emission factor, in ton OC/ton sand processed * (0.000313 ton OC/ton sand), for cold box core machine operations

T = OC emission factor for OC, in ton OC/ton sand processed* (0.000148 ton OC/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines and core dip drying ovens. These tests were conducted using USEPA 25A, calibrated to propane, for OC emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = (2.a)(U) + (2.b)(V) + (1.a)(W)

where:

TPE = total particulate emissions, in tons

U = PE emission factor, in ton PE/ton sand processed* (0.000153 ton PE/ton sand), for hot box core machine operations

V = PE emission factor, in ton PE/ton sand processed*(0.0000643 ton PE/ton sand), for cold box core machine operations

W = PE emission factor, in ton PE/ton sand processed*(0.0000396 ton PE/ton sand), for core oven operations

*These emissions factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE emission factors reflected in this permit to install are derived from various emission test runs for the hot and cold box core machines, and core dip drying ovens. These tests were conducted using USEPA method 5 for PE.

2.e the annual OC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

2.f the annual PE emission rate, in tons, based upon the rolling 12-month summation of monthly emission rates.

3. The permittee shall collect and record the following information each day:

3.a the pH of the catalyst gas scrubber, once per operating shift;

3.b the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

3.c all periods of time the catalyst gas scrubber was not operating in accordance with the requirements in condition A.II.2. above, and the corrective action taken to bring the catalyst gas scrubber into compliance with these operating conditions.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, which identify all exceedances of the following:

1.a for the first 12 calendar months of operation following the issuance of PTI 03-14001, the maximum allowable cumulative sand throughput restriction;

1.b after the first 12 calendar months of operation following the issuance of PTI 03-14001, the rolling, 12-month sand throughput restriction;

1.c the rolling, 12-month emission limitations for PE and OC; and

1.d all periods of time during which the scrubber for these emissions units was not maintained in accordance with the following:

i. the pH of the scrubber exceeded 5.

ii. the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm of gas flow.

IV. Reporting Requirements (continued)

1.e any time periods the "interlock system" associated with the catalytic gas scrubber did not operate in compliance with the requirements specified in section A.II.3.

These deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitations/usage restrictions of this permit shall be determined in accordance with the following compliance methods:

1.a Emission Limitation: 1,024,555 tons of sand per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

1.b Emission Limitation: 1,207.90 tons OC per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.c Emission Limitation: 151.56 tons PE per rolling 12-month period

Applicable Compliance Method: Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

1.d Emission Limitation: 3.61 lbs OC/hr, 3.33 tons OC/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4, 18, 25 and/or 25A of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4250 lbs/hr by an emission factor of 0.00085 lb OC/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 10,625 tons/yr by an emission factor of 0.000313 ton OC/ton of sand.

1.e Emission Limitation: 0.76 lbs PE/hr, 0.68 tons PE/year

Applicable Compliance Method: The hourly and annual emission limitations represents the emissions unit's maximum emission rates* based on maximum sand throughput rates. Therefore, it is not necessary to develop record keeping and/or reporting requirements. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

*The maximum hourly emission rate is calculated by multiplying the maximum hourly sand usage rate of 4250 lbs/hr by the an emission factor of 0.000178 lbs PE/lb sand. The maximum annual emission limitation is calculated by multiplying the maximum annual sand usage rate of 10,625 tons/yr by an emission rate of 0.0000643 ton PE/ton of sand.

1.f Emission Limitation: Visible PE from the stack(s) servicing this emissions unit shall not exceed 10% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation using U.S. EPA Method 9, which is located in 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.g Emission Limitation: 98% control efficiency for catalyst gas emissions, by weight

Applicable Compliance Method: The catalyst gas scrubber has a manufacturer's guarantee of 99% removal by weight of catalyst gas emissions. If required, compliance with the control efficiency (i.e. the percent reducation in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the following:

i. the outlet mass emission rate shall be determined using USEPA Methods 1-4 and 18 in 40 CFR Part 60; and

ii. the inlet mass emission rate shall be determined using emission factors developed from inlet testing on similar emissions units at the facility and data collected (i.e. process weight rate, etc.) during the testing of the control outlet for this emissions unit. Inlet mass emission testing is not possible on this emissions unit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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