OhioEPA

State of Ohio Environmental Protection Agency

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P.O. Box 1049
Columbus, OH 43216-1049

12/03/04

CERTIFIED MAIL

RE: Final Title V Administrative Permit Amendment Chapter 3745-77 permit

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

Dear Lisa Horan:

Enclosed is the Title V permit that allows you to operate the facility in the manner indicated in the permit. Because this permit may contain several conditions and restrictions, we urge you to read it carefully. ***This permit amendment is being processed for several typographical errors or clarifications. Please see the following page for a summary of the amendments.***

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Review Appeals Commission within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. It is also requested by the Director that a copy of the appeal be served upon the Environmental Enforcement Section of the Office of the Attorney General. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, Ohio 43215

If you have any questions, please contact Northwest District Office.

Sincerely,

Michael W. Ahern

Michael W. Ahern
Permit Issuance and Data Management Section
Division of Air Pollution Control

cc: Northwest District Office
File, DAPC PMU

Part II, Section A.1: Emissions unit P349 was deleted from the list of emissions units found in this section because 40 CFR Part 63, Subpart EEEEE is not an applicable requirement.

Part II, Section A (last paragraph): The citation of "Subpart NNNN" was made in error. This was corrected to "Subpart EEEEE."

Part III, Emissions Unit F001, Section A.IV.1.b : A period was added at the end of the sentence.

Part III, Emissions Unit F001, Sections A.V.1.a and b: A typographical error was corrected [the citation of OAC rule 3745-17-03(B)(**3**) was corrected to OAC rule 3745-17-03(B)(**4**)].

Part III, Emissions Unit F003, Section A.I.1: A typographical error was corrected [the citation of OAC rule 3745-17-07(B)(**1**) was corrected to OAC rule 3745-17-07(B)(**6**)].

Part III, Emissions Unit F004, Sections A.V.1.b, c and d: A typographical error was corrected [the citation of OAC rule 3745-17-03(B)(**1**) was corrected to OAC rule 3745-17-03(B)(**3**)].

Part III, Emissions Unit F005, Sections A.V.1.b, c and d: A typographical error was corrected [the citation of OAC rule 3745-17-03(B)(**1**) was corrected to OAC rule 3745-17-03(B)(**3**)].

Part III, Emissions Units P122, P211, P233, P297, P320, P329, P330,P331, P332, P337, P338, P339,P340, P352, P361, P376, P378, P390, P396, P399, P402, P406, p448, p449, P450, and P451, Section A.III.3: A typographical error was corrected ("a, b, **b, c** ,e" was changed to "a, b, **c, d**, e").

Part III, Emissions Units P184, P212, P213, P292, P298, P323, P324, p325, P353, P354, P355, P356, P383,P384, P385, P386, P388, P438,P439, and P441, **Section A.III.3:** A typographical error was corrected ("a, b, **b, c** ,e" was changed to "a, b, **c, d**, e") .

Part III, Emissions Unit P188, Section A.III.2: The last paragraph was deleted because it was a duplicate (it was already stated in Part II of this permit).

Part III, Emissions Unit P190, Section A.I.1: The citation of 40 CFR Part 63, Subpart EEEEE was deleted because it is not an applicable rule.
Part III, Emissions Unit P197, Section A.V.1.a: A typo was corrected ("***[explain when the last test was performed]) was deleted.

Part III, Emissions Unit P208, Section A.III.1: The last paragraph was deleted because it was a duplicate (it was already stated in Part II of this permit).

Part III, Emissions Unit P211, Section A.V.1.h: Typographical errors were corrected ("**PE**" was changed to "**NOx**" and "**Methods 1-5**" was changed to "**Methods 1 - 4 and 7**").

Part III, Emissions Unit P223, Section A.V.1.a: Typographical errors were corrected ("**shall**" was changed to "**may**" and "**only**" was deleted).

Part III, Emissions Unit P233, Sections A.V.1.h and i: Typographical errors were corrected ("**PE**" was changed to "**NOx**" and "**Methods 1-5**" was changed to "**Methods 1 - 4 and 7**").

Part III, Emissions Unit P256, Section A.IV.2: The phrase "**that is due by April 15 of each year**" was added at the end of the paragraph for clarifying purposes only.

Part III, Emissions Unit P264, Section A.I.2.c: The number "**384**" was added to the list of uncontrolled stacks. It was inadvertently left off.

Part III, Emissions Unit P284, Section A.IV.2: The phrase "**that is due by April 15 of each year**" was added at the end of the paragraph for clarifying purposes only.

Part III, Emissions Unit P289, Section A.IV.2: The phrase "**that is due by April 15 of each year**" was added at the end of the paragraph for clarifying purposes only.

Part III, Emissions Unit P318, Section A.I.1: A typographical error was corrected [the citation of OAC rule 3745-31-05(**D**) was corrected to OAC rule 3745-31-05(**C**)].

Part III, Emissions Unit P321, Sections A.I.1 and A.V.1.d: A typographical error was corrected (the "**4.48**" tons OC/year was changed to" **5.48**" tons OC /year).

Part III, Emissions Units P321, P358, P369, P370, P371, P372, P373, P374, P375, P379, P387, P394, P395, P397, P398, P401, P403, P404, P405, P430, P434, P435, P436, P442,P443, P444, P445, P446, P447, P452 and P453, Sections A.IV.1: A typographical error was corrected. The phrase "**all exceedances of the scrubber liquor pH of 5**" was inadvertently included and now has been deleted.

Part III, Emissions Units P333, P334, P335, P336 and P377, Section A.III.3: A typographical error was corrected ("a, b, **b, c ,**e" was changed to "a, b, **c, d,** e").

Part III, Emissions Unit P349, Section A.I.1: The citation of 40 CFR Part 63, Subpart EEEEE was deleted because it is not an applicable rule.

Part III, Emissions Unit P396, Section A.VI.1: A typographical error was corrected (the issue date was revised from "**9/4/03**" to "**2/12/04**").

Part III, Emissions Unit P399, Section A.VI.1: A typographical error was corrected (the issue date was revised from "**9/4/03**" to "**2/12/04**").

Part III, Emissions Units P409 and P410, Section A.V.1.a: A copy and paste error was corrected. This section mistakenly required testing within1 month of issuance of modified PTI #03-13364, issued 7/1/04. This was corrected to require testing within 6 months prior to permit renewal.

Part III, Emissions Units P413, P414, P421, P422, P424 and P427, Sections A.V.2 and 3: These sections were inadvertently deleted. They have now been reinstated.

State of Ohio Environmental Protection Agency

FINAL TITLE V ADMINISTRATIVE PERMIT AMENDMENT

Effective Date: **01/03/05**	Expiration Date: **01/03/10**	Modification Issue Date: **12/03/04**

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

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 S 11 B/C)
FN6 (Plant 1) - Shaker S 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

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

P454 (LINE 6 BLAST CABINET)
(Plant 2) - Line 6 Shot Blast Cleaning Cabinet

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 deviation reports shall satisfy the requirements 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. Full compliance with OAC rule 3745-77-07(A)(3)(c) requires reporting of all other deviations of the federally enforceable requirements specified in the permit as required by such rule.

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 satisfies 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 (for the deviations so reported) the requirements 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.

f. Except as otherwise indicated below, this Title V permit, or permit modification, is effective for five years from the original effective date specified in the permit. In the event that this facility becomes eligible for non-title V permits, this permit shall cease to be enforceable upon final issuance of all applicable OAC Chapter 3745-35 operating permits and/or registrations for all subject emissions units located at the facility and:

i. the permittee submits an approved facility-wide potential to emit analysis supporting a claim that the facility no longer meets the definition of a “major source” as defined in OAC rule 3745-77-01(W) based on the permanent shutdown and removal of one or more emissions units identified in this permit; or

ii. the permittee no longer meets the definition of a “major source” as defined in OAC rule 3745-77-01(W) based on obtaining federally enforceable restrictions on the facility-wide potential(s) to emit through issuance of one or more federally enforceable State operating permits or a federally enforceable permit to install; or

iii. a combination of i. and ii. above.

The permittee shall comply with any residual requirements, such as quarterly deviation reports, semi-annual deviation reports, and annual compliance certifications covering the period during which this Title V permit was enforceable. All records relating to this permit must be maintained in accordance with law.
(Authority for term: OAC rule 3745-77-01(W), OAC rule 3745-77-07(A)(3)(b)(ii), OAC rule 3745-77(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

22. 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.
(Authority for term: OAC rule 3745-77-01)

22. **Title VI Provisions**
If applicable, the permittee shall comply with the standards for recycling and reducing emissions of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices specified in 40 CFR 82.156.

b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment specified in 40 CFR 82.158.

c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

(Authority for term: OAC rule 3745-77-01(H)(11))

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 Enforceable Section

1. The following emissions units located at this facility are subject to 40 CFR, Part 63, Subpart EEEEE-- National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries (see attached):

P003 (ML6 Mold Facilities) - ML6 (Plant 2W) - Mold Facilities
P004 (ML6 MOLD S/O & CC) - ML6 (Plant 2W) - Mold Shakeout and Casting Cooling
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
P024 (Cupola - #6E) - Cupola #6E (Plant 2W) - Cupola and Iron Troughs
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
P122 (CR6 OVEN - CORE DRY) - CR6 (Plant 1) - Core Proc & Dry Oven H.B.
P141 (ML3 MOLD FACILITIES) - ML3 (Plant 1) - Molding Facilities
P142 (ML3 MOLD COOLING) - ML3 (Plant 1) - Mold Cooling
P164 (ML7 S/O & CC) - ML7 (Plant 2W) - Mold Shakeout and Casting Cooling
P165 (CUPOLA - #6W) - Cupola #6W (Plant 2W) - Cupola and Iron Troughs
P173 (ML1 MOLD COOLING) - ML1 (Plant 1) - Mold Cooling
P174 (ML1 S/O & CC) - ML1 (Plant 1) - Mold Shakeout and Casting Cooling
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
P208 (ML2 IRON POUR) - ML2 (Plant 1) - RMIP & Rod Furnace
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

P233 (CR6 OVEN - #1 CORE) - CR6 (Plant 1) - Core Drying Oven
P248 (ML3 S/O & CC) - ML3 (Plant 1) - Mold Shakeout and Casting Cooling
P264 (ML3 IRON POUR) - ML3 (Plant 1) - RMIP and Rod Furnace
P271 (ML1 IRON POUR) - ML1 (Plant 1) - RMIP and Rod Furnace
P273 (ML1 MOLD FACILITIES) - ML1 (Plant 1) - Mold Facilites
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
P302 (CR1 CB CORE MACH #60) - CR1 (Plant 1) - Core Cold Box #60
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
P352 (CR11 OVEN - #4 CORE) - CR11 (Plant 1) - Core Dip Drying Oven (3.4 L bulk)

A. State and Federally Enforceable Section (continued)

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

A. State and Federally Enforceable Section (continued)

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

All of the requirements of Subpart EEEEE are specified in Attachment A. Ordinarily, these requirements would be incorporated into Part II of this Title V permit; however, incorporating Subpart EEEEE (which is only available in PDF format) into Part II of this Title V permit was not possible. Numerous difficulties were encountered in attempting to copy and paste from a PDF format into WordPerfect format.

2. The following insignificant emissions units are located at this facility:

P268 - sand blast booth- Plant 1 (PTI 03-542)
P322 - oven batch bowl clean oven (PTI 03-14001)
Z002 - shot reclaimer- Plant 1
Z107 - wastewater treatment plant

Each insignificant emissions unit at this facility must comply with all applicable State and federal regulations, as 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.

3. The VE checks established throughout this permit are not required to follow the procedures specified in 40 CFR Part 60, Appendix A, Method 9 or Method 22.

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:

P013 - ladle repair- Plant 2W
P086 - chip & NDT- Dept. 816
P259 - oven ladle repair
Z101- battery charging area
Z102 - small burner throughout the plant
Z103 - maintenance welding activity
Z104 - pattern shop
Z105 - make-up air units
Z108 - degreasers
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 OAC Chapter 3745-18 does not establish sulfur dioxide emission limitation for this emissions unit because it only employs natural gas as fuel.

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 quarterly deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit.

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 may demonstrate compliance with the PE limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (0.044 mm cu. ft/hr) by the AP-42, Chapter 1.4-2 (revised 7/98) emission factor for natural gas combustion [1.9 lbs PE (filterable)/mm cu. ft], and then dividing by the maximum hourly heat input capacity of 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 emissions of fugitive dust, except for a period of 6 minutes during any 60-minute period (see A.I.2.a).
unpaved roadways and parking areas	OAC rule 3745-17-07(B)(5)	There shall be no visible emissions of fugitive dust, except for a period of 13 minutes during any 60-minute period (see A.I.2.b).
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: landfill, 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 employing control measures including, but not limited to: 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 employing control measures including, but not limited to: applying a suitable dust suppressant and speed reduction (vehicular traffic on unpaved 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 schedule for 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 each of the roadway segments and parking areas in accordance with the following frequencies:

paved roadways and parking areas: landfill and general plant roadways and parking areas
minimum inspection frequency: once during each operating calendar week

unpaved roadways and parking areas: landfill, settling basins and plant roadways and parking areas
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 Northwest District Office, 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 make implementation of control measures unnecessary.

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 quarterly 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, excluding control measures that were not performed because snow and /or ice cover or precipitation make the implementation of the control measure unnecessary.

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 emissions of fugitive dust from any paved roadway or parking area except for a period of time not to exceed 6 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 22 and the procedures specified in OAC rule 3745-17-03 (B)(4).

1.b Emission Limitation:
There shall be no visible emissions of fugitive dust 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 visible emission 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)(4).

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)(6)	See A.I.2.d.
	OAC rule 3745-17-08 (B)	See A.I.2.d.
	OAC rule 3745-31-05 (A)(3) (PTI #03-7860, issued 11/1/95 and subsequently modified on 6/19/03)	180 lbs PE/day 34.23 tons PE/year There shall be no visible emissions of fugitive dust, 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, and shall be deemed to be best available control measures:

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 depositing its load.

2.d The requirements of this rule are equal to or less stringent than the requirements 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 inspections of the landfill operations once during each day of normal operation.

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 Northwest District Office, 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 quarterly 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, excluding control measures that were not performed because snow and/or ice cover or precipitation make the implementation of the control measure unnecessary.

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 emissions of fugitive dust, 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 22 and the procedures specified in OAC rule 3745-17-03 (B)(4).

1.b Emissions Limitation:
180 lbs PE/day and 34.23 tons PE/year

Applicable Compliance Method:
If required, compliance with the daily emission limitation may be determined by combining the emissions from wind erosion and material handling operations. Fugitive dust emissions shall be calculated for the material handling operations utilizing AP-42 emission factors, section 13.2.4 (1/95), and for wind erosion utilizing USEPA'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).

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 shall also be shown with the annual limitation.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-7860, issued on 11/1/95, and subsequently modified on 6/19/03. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operation permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 exempt waste storage	OAC rule 3745-31-05 (A)(3) (PTI #03-10979, issued 2/11/98 and subsequently modified on 10/28/03)	6.57 tons of fugitive dust emissions/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 emissions of fugitive dust 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.b Visible emissions of fugitive dust 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 requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3475-31-05 (A)(3).

2.d As required by 2.e, 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, equally effective control measures to ensure compliance.

2.e The above-mentioned control measures 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 measures 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 As required by 2.h, 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, equally effective control measures to ensure compliance.

2.h The above-mentioned control measures 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 measures are necessary to ensure compliance with the above-mentioned applicable requirements. Implementation of the control measures 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 handled in these storage piles.

2. Except as otherwise provided in this section, the permittee shall perform inspections of each 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. The permittee may, upon receipt of written approval from the Northwest District Office, 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.

4. 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 4.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.

5. Except as otherwise provided in this section, the permittee shall perform inspections for wind erosion of each of the storage piles in accordance with the following minimum frequencies:

minimum inspection frequency: daily, during normal operations

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 Northwest District Office, 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 8.d. shall be kept for 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 quarterly 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 implemented as a result of an inspection, was not implemented, excluding control measures that were not performed because snow and/or ice cover or precipitation make the implementation of the control measure unnecessary.

2. The permittee shall submit quarterly 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 excluding control measures that were not performed because snow and/or ice cover or precipitation make the implementation of the control measure unnecessary.

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 of fugitive dust emissions/yr

Applicable Compliance Method:
Compliance with the annual limitation may be determined by summing the fugitive dust emissions from the three emissions generating activities: material handling, wind erosion of storage piles, and core waste crushing and screening. Fugitive dust emissions shall 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 emissions of fugitive dust 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 and the procedures specified in OAC rule 3745-17-03 (B)(3).

1.c Emission Limitation:
Visible emissions of fugitive dust 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 and the procedures specified in OAC rule 3745-17-03 (B)(3).

1.d Emission Limitation:
Visible emissions of fugitive dust 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)(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: 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 non-exempt waste storage	OAC rule 3745-31-05 (A)(3) (PTI #03-10979, issued 2/11/98 and subsequently modified on 10/28/03)	6.57 tons of fugitive dust emissions/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 emissions of fugitive dust 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.b Visible emissions of fugitive dust 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 As required by 2.e, 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 nonexempt waste storage piles

2.g As required by 2.h, 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 handled in these storage piles.

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. The permittee may, upon receipt of written approval from the Northwest District Office, 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.

4. 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 4.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.

5. 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.

6. 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 6.d. shall be kept for the pile surfaces (wind erosion), and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

7. Except as otherwise provided in this section, the permittee shall perform inspections for wind erosion of the nonexempt waste storage piles in accordance with the following minimum frequencies:

minimum inspection frequency: daily, during normal operations

III. Monitoring and/or Record Keeping Requirements (continued)

8. The permittee may, upon receipt of written approval from the Northwest District Office, 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.

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 plemented as a result of an inspection, was not implemented excluding control measures that were not performed because snow and/or ice cover or precipitation make the implementation of the control measure unnecessary.

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 excluding control measures that were not performed because snow and/or ice cover or precipitation make the implementation of the control measure unnecessary.

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 of fugitive dust emissions/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. fugitive dust emissions 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)."

1.b Emission Limitation:
Visible emissions of fugitive dust 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 and the procedures specified in OAC rule 3745-17-03(B)(3).

1.c Emission Limitation:
Visible emissions of fugitive dust 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 and the procedures specified in OAC rule 3745-17-03(B)(3).

V. Testing Requirements (continued)

1.d Emission Limitation:
Visible emissions of fugitive dust 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)(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: 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	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 rule.
	OAC rule 3745-17-11(B)	33.5 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F013, F036 and F038

Dust collectors: DC-008A Plt2W and DC-009A Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	22.6 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-30.

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F023, F024, F024A, F-025, F-025A and F-033

Dust collectors: DC014A Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
22.6 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	33.8 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-30.

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC002A Plt2W, DC-028A Plt2W, DC-028B Plt2W, DC-028C Plt2W and DC-028D Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	30.5 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F014, F037 and F039

Dust collectors: DC-008A Plt2W and DC-009A Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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 rule.
	OAC rule 3745-17-11(B)	57.1 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F012 and F015

Dust collectors: none

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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 rule.
	OAC rule 3745-17-11(B)	58.2 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F-011A and F-016A

Dust collectors: none

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	46.1 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	For the rotary mechanical iron pouring, see Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F-007, F-008 and F-009

Dust collectors: DC-029 Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	46.9 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	For the rotary mechanical iron pouring, see Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F-002, F-004 and F-005

Dust collectors: DC-027 Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	50.0 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F035

Dust collectors: DC001A Plt2W, DC003A Plt2W, DC004A Plt2W, DC005 Plt2W and DC006 Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
50.0 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	50.0 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F034

Dust collectors: DC-011A Plt2W, DC-012A Plt2W, DC013A Plt2W, DC014A Plt2W, DC-021 Plt2W, DC023 Plt2W, DC024 Plt2W and
DC025 Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
50.0 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	39.4 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC010A Plt2W, DC015 Plt2W and DC-030 Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
39.4 lbs PE/hr, .020 and .050 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitations by testing in accordance with USEPA Methods 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

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 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)	47.4 lbs of PE per hour, not including PE that are fugitive, or are from the hot blast unit
	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust 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 A.I.2.a and A.I.2.b.
hot blast unit, only	OAC rule 3745-17-10(B)	0.020 lb of PE per mmBtu of actual heat input
cupola, only	OAC rule 3745-18-06(E)	502 lbs of sulfur dioxide per hour See A.I.2.e.
	OAC rule 3745-21-08	See A.I.2.d.
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

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 efficiency sufficient to minimize visible emissions of fugitive dust at the point of capture consistent with good engineering design.

2.c OAC Chapter 3745-18 does not establish sulfur dioxide emission limitation for the hot blast associated with this emissions unit because the hot blast only employs natural gas as fuel.

2. Additional Terms and Conditions (continued)

2.d OAC rule 3745-21-08(D) 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.

2.e The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the iron being melted, limestone, coal and coke. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation (502 lbs/hr) relative to the sulfur dioxide emissions generated from the combustion of the fuels used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The permittee shall burn only natural gas in the hot blast unit.

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.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks, except the venturi scrubber 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 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 incident; 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 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.

*Once during each normal operating calendar week

III. Monitoring and/or Record Keeping Requirements (continued)

2. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible emissions of fugitive dust 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 shall be noted in an operations log. If 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 incident; 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 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.

*Once during each normal operating calendar week

3. 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.

4. The permittee shall properly 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 with any modifications deemed necessary by the permittee.

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 per minute, on a once per operating shift basis; and

c. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

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 stacks, except the venturi scrubber stack, 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.

2. The permittee shall submit quarterly deviation (excursion) reports , in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify all recorded periods of time 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)

3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible emissions of fugitive dust 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 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.

4. The permittee shall submit deviation (excursion) reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify each day when a fuel other than natural gas was burned in the hot blast unit associated with this emissions unit.

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 by the deadline established in 40 CFR, Part 63, Subpart EEEEE.

b. The emissions testing shall be conducted on all the stacks associated with this emissions unit, except for the hot blast stack, to demonstrate compliance with the allowable mass emission rates for PE and SO2.

c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

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 tests shall be conducted while the emissions unit is operating at a capacity representative of normal operations, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

e. During each test run, the permittee shall perform visible emissions readings using USEPA Method 22, for all the stacks serving this emissions unit, except the venturi scrubber stack.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from Northwest District Office 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 Northwest District Office.

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: 47.4 lbs PE/hr, not including emissions from the hot blast unit

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the hourly allowable PE based on the results of emission testing conducted for all the stacks associated with this emissions unit, except for the hot blast stack, in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

3.b Emission Limitation: 502 lbs SO2/hr

Applicable Compliance Method:

If required, compliance with the lbs/hr SO2 emission limitation shall be determined based on the results of emission testing conducted in accordance with Methods 1-4 and 6 of 40 CFR, Part 60, Appendix A.

* The only significant SO2 emissions are from the venturi scrubber stack.

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 dust emissions associated with this emissions unit, visible emissions 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	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 rule.
	OAC rule 3745-17-11(B)	53.1 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F-001 and M-016

Dust collectors: none

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	46.3 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 307

Dust collectors: DC055 Plt1, DC062 Plt1, DC063 Plt1 and DC068 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	50.0 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 416, 417, 427, 434, 436, 498, 499, 741and 742

Dust collectors:DC034B Plt1, DC064A Plt1, DC065A Plt1 and DC068 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
50.0 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	6.8 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 438, 454, 500, 502, 504, 509 and 512

Dust collectors: DC068 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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 rule.
	OAC rule 3745-17-11(B)	46.3 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 453, 488, 492, 494, 495 and 508

Dust collectors: none

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	11.4 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC-011B Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 1.20 lbs OC/hr, 1.00 ton OC/year 0.39 lb PE/hr, 0.27 ton PE/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	49.89 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 1.20 lbs OC/hr, 1.00 ton OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.39 lbs PE/hr, 0.27 tons PE/year

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 49.89 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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)	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 rule.
	OAC rule 3745-17-11(B)	11.0 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC-011B Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: ML3 MOLD FACILITIES (P141)

Activity Description: ML3 (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
ML3 (Plant 1) - molding 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 rule.
	OAC rule 3745-17-11(B)	53.2 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 377

Dust collectors: none

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	35.4 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 308 and 309

Dust collectors: DC079 Plt, DC-087 Plt1, DC-088 Plt1 and DC-089 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	45.0 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC060 Plt1 and DC066 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	40.0 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC025 Plt1, DC061 Plt1, DC-088 Plt1 and DC-089 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
40.0 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	12.9 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC048A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
12.9 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	43.7 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: F027, F029, F032, F040, M008, M011 and M012

Dust collectors: DC001A Plt2W, DC002A Plt2W, DC017 Plt2W and DC-029 Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
43.7 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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 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)	48.6 lbs of PE per hour, not including PE that are fugitive, or are from the hot blast unit.
	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust 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 A.I.2.a and A.I.2.b.
hot blast unit, only	OAC rule 3745-17-10(B)	0.020 lb of PE per mmBtu of actual heat input
cupola, only	OAC rule 3745-18-06(E)	547 lbs of sulfur dioxide per hour See A.I.2.e.
	OAC rule 3745-21-08	See A.I.2.d.
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

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 efficiency sufficient to minimize visible emissions of fugitive dust at the point of capture consistent with good engineering design.

2.c OAC Chapter 3745-18 does not establish sulfur dioxide emission limitation for the hot blast associated with this emissions unit because the hot blast only employs natural gas as fuel.

2. Additional Terms and Conditions (continued)

2.d OAC rule 3745-21-08(D) is not applicable because the facility is not located in a "Priority I" county and the emissions unit was installed prior to February 15, 1972.

2.e The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the iron being melted, limestone, coal and coke. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation (547 lbs/hr) relative to the sulfur dioxide emissions generated from the combustion of the fuels used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The permittee shall burn only natural gas in the hot blast unit.

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.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks, except the venturi scrubber 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 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 incident; 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 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.

*Once during each normal operating calendar week

III. Monitoring and/or Record Keeping Requirements (continued)

2. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible emissions of fugitive dust 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 shall be noted in an operations log. If 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 incident; 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 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.

*Once during each normal operating calendar week

3. 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.

4. The permittee shall properly 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 per minute, on a once per operating shift basis; and

c. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

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 stacks 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.

2. The permittee shall submit deviation (excursion) reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify each day when a fuel other than natural gas was burned in hot blast unit associated with this emissions unit.

3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible emissions of fugitive dust 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 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.

IV. Reporting Requirements (continued)

4. The permittee shall submit quarterly deviation (excursion) reports , in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, 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.

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 by the deadline established in 40 CFR, Part 63, Subpart EEEEE.

b. The emissions testing shall be conducted on all the stacks associated with this emissions unit, except for the hot blast stack, to demonstrate compliance with the allowable mass emission rates 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 at capacity representative of normal operations, 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 Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office.

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:
If required, the permittee shall demonstrate compliance with the hourly allowable PE based on the results of emission testing conducted on all the stacks associated with this emissions unit, except for the hot blast stack, in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

3.b Emission Limitation: 547 lbs SO2/hr

Applicable Compliance Method:

If required, compliance with the lbs/hr SO2 emission limitation shall be determined based on the results of emission testing conducted in accordance with Methods 1-4 and 6 of 40 CFR, Part 60, Appendix A.

* The only significant source of SO2 emissions are from the venturi scrubber stack.

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 dust emissions associated with this emissions unit, visible emissions 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	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 rule.
	OAC rule 3745-17-11(B)	35.4 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC018 Plt2W and DC-022A Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitations by testing in accordance with USEPA Methods 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: 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 rule.
	OAC rule 3745-17-11(B)	47.0 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 577, 578 and 579

Dust collectors: none

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitations by testing in accordance with USEPA Methods 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	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 rule.
	OAC rule 3745-17-11(B)	43.8 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 476, 478 and 554

Dust collectors: DC080 Plt1, DC086 Plt1, DC-088 Plt1, DC-089 Plt1 and DC-090 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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 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	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 rule.
	OAC rule 3745-17-11(B)	50.0 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 008, 439, 518A, 519A, 520A, 558A, 829 and 830

Dust collectors: DC037A Plt1, DC057A Plt1, DC058 Plt1, DC069A Plt1, DC071A Plt1 and DC072A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
50.0 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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 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	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 rule.
	OAC rule 3745-17-11(B)	50.0 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 615 and 622

Dust collectors: DC034B Plt1, DC035A Plt1, DC036A Plt1, DC037A Plt1, DC038 Plt1 and DC-090 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
50.0 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B).
		1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined
		151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined
		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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	85.8 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 49.20 lbs OC/hr, 42.31 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 5.80 lbs PE/hr, 3.67 tons PE/year

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 85.8 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 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)	51.0 lbs of PE per hour, not including PE that are fugitive
	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust 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 A.I.2.a and A.I.2.b.
cupola, only	OAC rule 3745-18-06(E)	645 lbs of sulfur dioxide per hour See A.I.2.d.
	OAC rule 3745-21-08 OAC rule 3745-23-06(B)	See A.I.2.c.
cupola, only	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-31-05 (PTI #03-277, issued 8/19/75)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A), 3745-17-11(B), 3745-21-08(B), 3745-23-06(B) and 3745-18-06(E).

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 efficiency 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 The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-277.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.d The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the iron being melted, limestone, coal and coke. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation (645 lbs/hr) relative to the sulfur dioxide emissions generated from the combustion of the fuels used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The temperature in the dwell chamber shall be maintained at or above 1300 degrees Fahrenheit for 0.3 seconds or greater.

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 175 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 weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks, except the dwell chamber and recoup 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 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 incident; 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 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.

* once during each normal operating calendar week

III. Monitoring and/or Record Keeping Requirements (continued)

2. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible emissions of fugitive dust 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 shall be noted in an operations log. If 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 incident; 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 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.

*Once during each normal operating calendar week.

3. The permittee shall properly 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 with any modifications deemed necessary by the permittee.

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 per minute, on a once per operating shift basis; and

c. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. 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 for each day all non-rolling, 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 Fahrenheit.

* "Operation" is defined as the operating time when the cupola is on blast, i.e., the period of time during which hot air (blast) is forced through the tuyeres onto a cupola burden consisting of coke, limestone and scrap metal.

5. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following monitoring and record keeping requirements are as stringent as or more stringent than the monitoring and record keeping requirements contained in Permit to Install # 03-277, issued on 8/19/1975: A.III.1 thru 4. The monitoring and record keeping requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping requirements in the Permit to Install.

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 stacks, except the dwell chamber and recoup stack, 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.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible emissions of fugitive dust 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 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 quarterly deviation (excursion) reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify all recorded periods of time 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.

4. The permittee shall submit quarterly deviation (excursion) reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify all non-rolling, 3-hour blocks of time during which the average combustion temperature within the dwell chamber did not comply with the temperature limitation specified above.

5. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following reporting requirements are as stringent as or more stringent than the reporting requirements contained in Permit to Install # 03-277, issued on 8/19/1975: A.IV.1 thru 4. The reporting requirements contained in the above-referenced Permit to Install are subsumed into the reporting requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying reporting requirements in the Permit to Install.

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 by the deadline established in 40 CFR, Part 63, Subpart EEEEE.

b. The emissions testing shall be conducted on all the stacks associated with this emissions unit, except for the hot blast stack, to demonstrate compliance with the allowable mass emission rates for PE and SO2.

c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

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 at capacity representative of normal operations, unless otherwise specified or approved by the Director or appropriate Ohio EPA District Office or local air agency.

e. During each test run, the permittee shall perform visible emissions readings using USEPA Method 22, for all the stacks serving this emissions unit, except the venturi scrubber stack.

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 Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office.

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

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the hourly allowable PE based on the results of emission testing conducted for all the stacks associated with this emissions unit in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

3.b Emission Limitation: 645 lbs SO2/hr

Applicable Compliance Method:

If required, compliance with the lbs/hr limitation shall be determined based on the results of emission testing conducted in accordance with Methods 1-4 and 6 of 40 CFR, Part 60, Appendix A.

* The only significant SO2 emissions are from the dwell chamber and recoup stack.

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 fugitive dust emissions associated with this emissions unit, visible emissions 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).

4. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following testing requirements are as stringent as or more stringent than the testing requirements contained in Permit to Install # 03-277, issued on 8/19/1975: A.V.1 thru 3. The testing requirements contained in the above-referenced Permit to Install are subsumed into the testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying testing requirements in the Permit to Install.

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)	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 rule.
	OAC rule 3745-17-11(B)	45.5 lbs 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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 695, 696 and 879

Dust collectors: DC080 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
45.5 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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)	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 rule.
	OAC rule 3745-17-11(B)	45.5 lbs 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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 456, 664, 665, 782, 880, and 948

Dust collectors: DC083 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
45.5 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	21.9 lbs 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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC014A Plt1 and DC047 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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 - 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)	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 rule.
	OAC rule 3745-17-11(B)	17.3 lbs PE/hr
	OAC rule 3745-18-06(E)(2)	466 lbs SO2/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-295, issued (12/22/75)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A), 3745-18-06 and 3745-17-11(B).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: M-032

Dust collectors: DC-019A Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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, .020 and .050 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitations by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
466 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: 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	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 rule.
	OAC rule 3745-17-11(B)	18.8 lbs 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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC053 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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	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 rule.
	OAC rule 3745-17-11(B)	24.4 lbs 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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC052 Plt1 and DC053 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
24.4 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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	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 rule.
	OAC rule 3745-17-11(B)	14.6 lbs 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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 233

Dust collectors: DC044A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
14.6 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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 rule.
	OAC rule 3745-17-11(B)	42.4 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	For the rotary mechanical iron pouring, see Part II of this permit.
	OAC rule 3745-31-05(A)(3) (PTI #03-322, issued 11/25/75)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 522, 524 and 707

Dust collectors: none

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	28.4 lbs PE/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-322, issued 11/25/75)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC042 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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)	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 rule.
	OAC rule 3745-17-11(B)	17.3 lbs PE/hr
	OAC rule 3745-18-06(E)(2)	466.1 lbs SO2/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-322, issued (11/25/75)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A), 3745-18-06 and 3745-17-11(B).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC-019A Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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, 0.02 gr/dscf, and .050 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitations by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
466.1 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) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	165 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

*Once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.21lbs OC/hr, 5.96 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.31 lbs PE/hr, 1.59 tons PE/year

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 165 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.95 lb NOx/hr, 1.56 tons NOx/year

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx emission limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.80 lb CO/hr and 1.31 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 18/19 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	70.8 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions taken, if any, to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 36.90 lbs OC/hr, 31.73 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 4.35 lbs PE/hr, 2.75 tons PE/year

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 70.8 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 20/21(two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B).
		1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined
		151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined
		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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (See A.I.2.e.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	70.8 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions taken, if any, to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 36.90 lbs OC/hr, 31.73 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 4.35 lbs PE/hr, 2.75 tons PE/year

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 70.8 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 grinder (N 11 B/C)	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 rule.
	OAC rule 3745-17-11(B)	5.90 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors:DC048A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
5.90 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	17.73 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors:DC020 Plt2W

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
17.73 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	2.37 lbs PE/hr

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors:DC064A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions 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 ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
2.37 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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) (PTI 03-14001, issued2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 11.25 lbs OC/hr, 9.30 tons OC/year 3.61 lbs PE/hr, 2.49 tons PE/yr 1.25 lbs carbon monoxide (CO)/hr, 2.05 tons CO/yr 1.49 lbs 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	220 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 11.25 lbs OC/hr, 9.30 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 3.61 lbs PE/hr, 2.49 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 220 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 1.49 lbs NOx/hr, 2.44 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx emission limitation by testing in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 1.25 lbs CO/hr, 2.05 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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)	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 rule.
	OAC rule 3745-17-11(B)	11.01 lbs PE/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-463, issued 1/4/77)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC-011B Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
11.01 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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)	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 rule.
	OAC rule 3745-17-11(B)	7.99 lbs 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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC014A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
7.99 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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)	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 rule.
	OAC rule 3745-17-11(B)	5.53 lbs 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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC048A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
5.53 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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 and casting 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 rule.
	OAC rule 3745-17-11(B)	43.70 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks:118, 159, 316, 318, 321 and 379

Dust collectors: DC067A Plt1, DC079 Plt1, DC-087 Plt1, DC-088 Plt1 and DC-089 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
43.70 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	14.56 lbs PE/hr
	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 rules 3745-17-07(A) and 3745-17-11(B).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC013A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
14.56 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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)	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 rule.
	OAC rule 3745-17-11(B)	4.10 lbs PE/hr
	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 rules 3745-17-07(A) and 3745-17-11(B).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC013A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
4.10 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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)	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 rule.
	OAC rule 3745-17-11(B)	9.06 lbs 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 rules 3745-17-07(A) and 3745-17-11(B).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC-011B Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
9.06 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-659, issued 8/11/78)	9.0 lbs PE/hr, 17.2 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC013A Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

3. The permittee shall collect and record each month the number of hours this emissions unit was in operation.

4. The permittee shall calculate and record each year the total PE for this emissions unit, in tons (the annual PE shall be calculated by multiplying the hourly emission limitation by the annual number of hours of operation (summation of the monthly numbers of hours operation, from section A.III.3, for the calendar year).

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

2. The permittee shall submit annual reports that summarize the actual annual PE for this emissions unit. These reports shall be submitted to the Director (the Northwest District Office) by January 31 of each year and shall cover the previous calendar year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Fee Emission Report that is due by April 15 of each year.

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:
9.0 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
17.2 tons PE/year

Applicable Compliance Method:
The permittee shall demonstrate compliance with the annual PE limitation based on the record keeping requirements established in sections A.III.3 and 4 of this permit.

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: 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)	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 rule.
	OAC rule 3745-17-11(B)	4.10 lbs PE/hr
	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 rules 3745-17-07(A) and 3745-17-11(B).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors:DC013A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
4.10 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	46.4 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	For the rotary mechanical iron pouring, see Part II of this permit.
	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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 384, 385, 386, 389, 394, 396, 473 and 474

Dust collectors: DC-088 Plt1 and DC-089 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
46.4 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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
furnace #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 rule.
	OAC rule 3745-17-11(B)	45.54 lbs PE/hr
	OAC rule 3745-31-05(A)(3) (PTI #03-501, issued 3/15/77)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A) and 3745-17-11(B).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 781, 881, 882, 883, 884, 885 and 886

Dust collectors: none

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
45.54 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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 rule.
	OAC rule 3745-17-11(B)	46.05 lbs 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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: M-046

Dust collectors: none

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
46.05 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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 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	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 rule.
	OAC rule 3745-17-11(B)	46.05 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	For the rotary mechanical iron pouring, see Part II of this permit.
	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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 563A, 564A, and 701

Dust collectors: DC080 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
46.05 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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 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	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 rule.
	OAC rule 3745-17-11(B)	32.27 lbs PE/hr
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC056 Plt1 and DC057A Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
32.27 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	12.50 lbs 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).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC059 Plt1

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
12.50 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-820, issued 7/1/80)	10.0 lbs PE/hr, 19.2 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC-030 Plt2W

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

3. The permittee shall collect and record each month the number of hours this emissions unit was in operation.

4. The permittee shall calculate and record each year the total PE for this emissions unit, in tons (the annual PE shall be calculated by multiplying the hourly emission limitation by the annual number of hours of operation (summation of the monthly numbers of hours operation, from section A.III.3, for the calendar year).

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

2. The permittee shall submit annual reports that summarize the actual annual PE for this emissions unit. These reports shall be submitted to the Director (the Northwest District Office) by January 31 of each year and shall cover the previous calendar year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Fee Emission Report that is due by April 15 of each year.

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:
10.0 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
19.2 tons PE/year

Applicable Compliance Method:
The permittee shall demonstrate compliance with the annual PE limitation based on the record keeping requirements established in sections A.III.3 and 4 of this permit.

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 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	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-820, issued 7/1/80)	15.0 lbs PE/hr, 28.8 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC005B Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

3. The permittee shall collect and record each month the number of hours this emissions unit was in operation.

4. The permittee shall calculate and record each year the total PE for this emissions unit, in tons (the annual PE shall be calculated by multiplying the hourly emission limitation by the annual number of hours of operation (summation of the monthly numbers of hours operation, from section A.III.3, for the calendar year).

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

2. The permittee shall submit annual reports that summarize the actual annual PE for this emissions unit. These reports shall be submitted to the Director (the Northwest District Office) by January 31 of each year and shall cover the previous calendar year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Fee Emission Report that is due by April 15 of each year.

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:
15.0 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
28.8 tons PE/year

Applicable Compliance Method:
The permittee shall demonstrate compliance with the annual PE limitation based on the record keeping requirements established in sections A.III.3 and 4 of this permit.

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 #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 # 38/39 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B).
		1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined
		151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined
		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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	61.2 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 61.2 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 #2	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	164 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitations: 7.21 lbs OC/hr, 5.96 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 2.31 lbs PE/hr, 1.59 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 164 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.95 lb NOx/hr, 1.56 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx emission limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.i Emission Limitation: 0.80 lb CO/hr, 1.31 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 47/48 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B).
		1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined
		151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined
		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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	70.8 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 36.90 lbs OC/hr, 31.73 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 4.35 lbs PE/hr, 2.75 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 70.8 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 core machine # 49/50 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	70.8 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 36.90 lbs OC/hr, 31.73 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 4.35 lbs PE/hr, 2.75 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 70.8 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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
FN6 shaker (N 11 B/C)	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-1871, issued 11/15/84)	1.05 lbs PE/hr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC005B Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
1.05 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: FN6 SHAKER S 11 B/C (P301)

Activity Description: FN6 (Plant 1) - Shaker S 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 shaker (S 11 B/C)	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-1871, issued 11/15/84)	1.05 lbs PE/hr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC005B Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
1.05 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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 # 60 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

III. Monitoring and/or Record Keeping Requirements (continued)

4. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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)	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-2285, issued 5/4/2004)	1.46 lbs PE/hr, 6.39 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC014A Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
1.46 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
6.39 tons PE/year

Applicable Compliance Method:
As long as compliance withe hourly PE limitation is maintained , compliance with the annual PE limitation shall be ensured (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-2285, issued 5/4/2004. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 - #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, issued 1/27/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(B), 3745-17-08(B), 3745-17-07(A), rule 3745-21-08(D), and 3745-23-06(B). cupola emissions: 495.4 lbs carbon monoxide (CO)/hr 23.6 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 lb lead (Pb)/hr 7.4 lbs organic compounds (OC)/hr, 15.9 tons OC/yr 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(C)	See A.I.2.b.
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-18-06(E)	For the cupola, see A.I.2.a.
	OAC rule 3745-21-08(D)	See A.I.2.d.
	OAC rule 3745-23-06(B)	See A.I.2.c.
	OAC rule 3745-17-10(B)(1)	For the hot blast unit, see A.I.2.a.
	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust 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 A.I.2.h and i.)
	40 CFR, Part 63, Subpart EEEEE	For the cupola only, see Part II of this permit.

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) applicability:

i. for the 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; and
(e) 0.82 ton Pb per rolling 12-month period.

ii. for the hot blast unit:

(a) 7.5 tons CO per rolling 12-month period;
(b) 9.0 tons NOx per rolling 12-month period; and
(c) 0.69 ton PE per rolling 12-month period.

The federally enforceable limitations are based on the restriction of the number of hours of operation specified in section A.II.1 (for the cupola) and the natural gas usage restriction specified in section A.II.2 of this permit(for the hot blast unit).

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 the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14054.

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.

2. Additional Terms and Conditions (continued)

2.g OAC Chapter 3745-18 does not establish sulfur dioxide emission limitation for the hot blast associated with this emissions unit because the hot blast only employs natural gas as fuel.

2.h 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.i During cupola furnace tapping, the tapping hood shall have a collection efficiency sufficient to minimize visible emissions of fugitive dust at the point of capture consistent with good engineering design.

II. Operational Restrictions

1. The maximum annual number of hours of operation* for the cupola shall not exceed 4300 hours, based upon a rolling, 12-month summation of the monthly numbers of hours of operation.

* "Operation" is defined as the operating time when the cupola is on blast, i.e., the period of time during which hot air (blast) is forced through the tuyeres onto a cupola burden consisting of coke, limestone and scrap metal.

[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 Northwest District Office.]

2. The maximum annual natural gas usage for hot blast unit shall not exceed 180.0 mm cu. ft/yr, based upon a rolling, 12-month summation of the monthly natural gas usage* rates.

To ensure enforceability during the first 12 calendar months of operation following the issuance of PTI #03-14054, issued 1/27/04, the permittee shall not exceed the natural gas usage levels specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
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 PTI 03-14054, issued 01/27/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates.

* This represents total natural gas usage while the hot blast unit is operating in either a "blast" or "spill" mode.

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 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 with any modifications deemed necessary by the permittee.

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 per minute, on a once per operating shift basis; and

c. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

2. The permittee shall calculate and record the following information each month for this emissions unit:

a. the number of hours of operation, for the cupola;

b. the rolling, 12-month numbers of hours of operation, for the cupola;

c. the quantity of natural gas combusted in the hot blast unit, in mm cu. ft;

d. for the first 12 months of operation following the issuance of PTI #03-14054, issued 1/27/04, the cumulative monthly natural gas usage rates, in mm cu. ft, for the hot blast unit;

e. after the first 12 months of operation following the issuance of PTI #03-14054, issued 1/27/04, the rolling, 12-month summation of the monthly natural gas usage rates, for the hot blast unit;

f. for the cupola, the rolling, 12-month emission rates, in tons, for CO, NOx, SO2, PE and Pb, calculated by multiplying the maximum allowable lbs/hr emission rate for each pollutant by the rolling, 12-month summation of the monthly numbers of hours of operation, from section A.III.2.b above, and then dividing by 2000;

g. for the hot blast unit, the rolling, 12-month emission rates, in tons, for CO, NOx and PE, calculated as follows:

i. for CO, multiply the rolling, 12-month natural gas usage rate, from section A.III.2.e above, by the emission factor, from AP-42, Table 1.4-1 (revised 7/98), of 84 lbs CO/mm cu. ft, and then divide by 2000;

ii. for NOx, multiply the rolling, 12-month natural gas usage rate, from section A.III.2.e above, by the emission factor, from AP-42, Table 1.4-1 (revised 7/98), of 100 lbs NOx/mm cu. ft, and then divide by 2000; and

iii. for PE, multiply the rolling, 12-month natural gas usage rate, from section A.III.2.e above, 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 divide by 2000.

III. Monitoring and/or Record Keeping Requirements (continued)

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 for each day all non-rolling, 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 Fahrenheit.

* "Operation" is defined as the operating time when the cupola is on blast, i.e., the period of time during which hot air (blast) is forced through the tuyeres onto a cupola burden consisting of coke, limestone and scrap metal.

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.

5. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible emissions of fugitive dust 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 shall be noted in an operations log. If 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 incident; 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 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.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify all recorded periods of time 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 quarterly deviation (excursion) reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month numbers of hours of operation restriction of 4300 (for the cupola);

b. for the first 12 calendar months of operation following the issuance of PTI #03-14054, issued 1/27/04, all exceedances of the allowable cumulative natural gas usage rates (for the hot blast unit);

c. after the first 12 calendar months of operation following the issuance of PTI #03-14054, issued 1/27/04, all exceedances of the rolling, 12-month natural gas usage restriction of 180 mm cu. ft.(for the hot blast unit);

d. all exceedances of the rolling, 12-month emission limitations of 1065.1 tons, 50.7 tons, 45.7 tons, 38.1 tons and 0.82 ton for CO, NOx, SO2, PE and Pb, respectively (for the cupola); and

e. all exceedances of the rolling, 12-month emission limitations of 7.5 tons, 9.0 tons and 0.69 ton for CO, NOx and PE respectively (for the hot blast unit).

3. The permittee shall submit deviation (excursion) reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify each day when a fuel other than natural gas was burned in the hot blast unit associated with this emissions unit.

4. The permittee shall submit quarterly deviation (excursion) reports, in accordance with paragraph A.I.c.ii. of the General Terms and Conditions of this permit, that identify all non-rolling, 3-hour blocks of time during which the average combustion temperature within the direct-flame afterburner did not comply with the temperature limitation specified above.

5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible emissions of fugitive dust 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 emissions. These reports shall be submitted to the Director (the Northwest District Office) 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.1. of the terms and conditions of this permit shall be determined in accordance with the following methods:

1.a Emission Limitations: 495.4 lbs CO/hr, 1065.1 tons CO per rolling, 12-month period (cupola)

Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly CO emission limitation based upon the results of stack testing conducted in accordance with USEPA Methods 1 - 4 and 10 of 40 CFR, Part 60, Appendix A.

The permittee shall demonstrate compliance with the rolling, 12-month CO emission limitation based on the record keeping requirements established in section A.III.2 of this permit.

1.b Emission Limitations: 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 NOx emission limitation based upon the results of stack testing conducted in accordance with USEPA Methods 1 - 4 and 7 of 40 CFR, Part 60, Appendix A.

The permittee shall demonstrate compliance with the rolling, 12-month NOx emission limitation based on the record keeping requirements established in section A.III.2 of this permit.

V. Testing Requirements (continued)

1.c Emission Limitations: 21.2 lbs SO2/hr, 45.6 tons SO2 per rolling, 12-month period (cupola)

Applicable Compliance Method: Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly SO2 emission limitation based upon the results of stack testing conducted in accordance with USEPA Methods 1 - 4 and 6 of 40 CFR, Part 60, Appendix A.

The permittee shall demonstrate compliance with the rolling, 12-month SO2 emission limitation based on the record keeping requirements established in section A.III.2 of this permit

1.d Emission Limitations:17.7 lbs PE/hr, 0.03 gr PE/dscf, and 38.1 tons PE per rolling, 12-month period (cupola)

Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly PE and gr PE/dscf limitations based upon the results of stack testing conducted in accordance with USEPA Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

The permittee shall demonstrate compliance with the rolling, 12-month PE limitation based on the record keeping requirements established in section A.III.2 of this permit

1.e Emission Limitations: 0.38 lb Pb/hr, 0.82 ton Pb per rolling, 12-month period (cupola)

Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly Pb emission limitation based upon the results of stack testing conducted in accordance with USEPA Methods 1 - 4 and 12 of 40 CFR, Part 60, Appendix A.

The permittee shall demonstrate compliance with the rolling, 12-month Pb emission limitation based on the record keeping requirements established in section A.III.2 of this permit

1.f Emission Limitations: 7.4 lbs OC/hr, 15.9 tons OC/yr (cupola)

Applicable Compliance Method: The permittee shall demonstrate compliance with the hourly OC emission limitation based upon the results of stack testing conducted in accordance with USEPA Methods 1 - 4 and either 18, 25, or 25A, as appropriate, of 40 CFR, Part 60, Appendix A.

The annual emission limitation was developed by multiplying the hourly emission limitation by 4300 hours/yr, and then dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation and the maximum hours of operation, compliance shall also be shown with the annual limitation.

1.g Emission Limitations: 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 CO emission 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 CO emission limitation based on the record keeping requirements established in section A.III.2 of this permit

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 NOx emission limitation based on the record keeping requirements established in section A.III.2 of this permi

V. Testing Requirements (continued)

1.i Emission Limitations:0.23 lb PE/hr, 0.69 ton 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 1.4-2 (revised 7/98) of 1.9 lbs PE/mm cu. ft.

If required, compliance with the hourly allowable PE limitation above shall be determined in accordance with Methods 1 through 5 of 40 CFR, Part 60, Appendix A.

The permittee shall demonstrate compliance with the rolling, 12-month PE limitation based on the record keeping requirements established in section A.III.2 of this permi

1.j Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.k Emission Limitation: For fugitive dust emissions associated with this emissions unit, visible emissions 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).

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirements:

2.a The emission testing shall be conducted by the deadline established in 40 CFR, Part 63, Subpart EEEEE.

2.b The emissions testing shall be conducted to demonstrate compliance with the allowable mass emission rates 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 methods shall be employed to demonstrate compliance with the allowable mass emission rates:

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 either 18, 25, or 25A, as appropriate, 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 Northwest District Office.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14054, issued on 1/27/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 #3	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	171 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.74 lbs OC/hr, 6.39 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.48 lbs PE/hr, 1.71 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 171 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 1.02 lbs NOx/hr, 1.68 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.86 lb CO/hr, 1.41 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 66/67 (two station machine) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

III. Monitoring and/or Record Keeping Requirements (continued)

4. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 5.95 lbs OC/hr, 5.48 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.25 lbs PE/hr, 1.13 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 71/72 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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 lb carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lb nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	113 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 8.70 lbs PE/hr, 5.51 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 113 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

1.i Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 73/74 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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 lb carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lb nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	113 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 8.70 lbs PE/hr, 5.51 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 113 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

1.i Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 75/76 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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 lb carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lb nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	113 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 8.70 lbs PE/hr, 5.51 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 113 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

1.i Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	166 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 166 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	166 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 166 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 14.77 lbs OC/hr, 12.20 tons OC/year 4.74 lbs PE/hr, 3.27 tons PE/yr 1.64 lbs carbon monoxide (CO)/hr, 2.69 tons CO/yr 1.96 lb nitrogen oxide (NOx)/hr, 3.20 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	264 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 14.77 lbs OC/hr, 12.20 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 4.74 lbs PE/hr, 3.27 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 264 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 1.96 lb NOx/hr, 3.20 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 1.64 lbs CO/hr, 2.69 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 lbs 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	171 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.70 lbs OC/hr, 6.36 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.47 lbs PE/hr, 1.70 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 171 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 1.02 lbs NOx/hr, 1.67 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.86 lb CO/hr, 1.40 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 1	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.d.
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	164 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

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 from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 164 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 2	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.d.
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	164 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

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 from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 164 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 3	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 14.77 lbs OC/hr, 12.20 tons OC/yea 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.d.
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	261 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

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 from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 14.77 lbs OC/hr, 12.20 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 4.74 lbs PE/hr, 3.27 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 261 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 3	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.d.
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	168 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

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 from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.70 lbs OC/hr, 6.36 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.47 lbs PE/hr, 1.70 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 168 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	166 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 166 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	166 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 166 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 14.77 lbs OC/hr, 12.20 tons OC/year 4.74 lbs PE/hr, 3.27 tons PE/yr 1.64 lbs carbon monoxide (CO)/hr, 2.69 tons CO/yr 1.96 lb nitrogen oxide (NOx)/hr, 3.20 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	264 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 14.77 lbs OC/hr, 12.20 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 4.74 lbs PE/hr, 3.27 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 264 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 1.96 lb NOx/hr, 3.20 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 1.64 lbs CO/hr, 2.69 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 lbs 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	171 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.70 lbs OC/hr, 6.36 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.47 lbs PE/hr, 1.70 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 171 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 1.02 lbs NOx/hr, 1.67 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.86 lb CO/hr, 1.40 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-2285)	4.22 lbs PE/hr, 18.48 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: M002-1

Dust collectors: none

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
4.22 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
18.48 tons PE/year

Applicable Compliance Method:
As long as compliance with the hourly emission limitation is maintained, compliance with the annual emission limitation shall be ensured (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

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: 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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 1.85 lbs OC/hr, 1.53 tons OC/year 0.59 lb PE/hr, 0.41 ton 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	65.6 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 1.85 lbs OC/hr, 1.53 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.59 lb PE/hr, 0.41 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 65.6 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 77/78 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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 lb carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lb nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	113 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 8.70 lbs PE/hr, 5.51 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 113 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

1.i Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 79/80 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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 lb carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lb nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	113 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 8.70 lbs PE/hr, 5.51 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 113 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

1.i Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 81/82 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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 lb carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lb nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	113 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 8.70 lbs PE/hr, 5.51 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 113 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

1.i Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 83/84 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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 lb carbon monoxide (CO)/hr, 1.08 tons CO/yr 0.52 lb nitrogen oxide (NOx)/hr, 1.29 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	113 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 73.80 lbs OC/hr, 63.47 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 8.70 lbs PE/hr, 5.51 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 113 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.43 lb CO/hr, 1.08 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

1.i Emission Limitation: 0.52 lb NOx/hr, 1.29 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 69/70 (two station machine) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

III. Monitoring and/or Record Keeping Requirements (continued)

4. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 7.93 lbs OC/hr, 7.30 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 6.02 lbs PE/hr, 4.18 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand and 0.000153 lb OC/lb sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-7169)	2.07 lbs PE/hr, 9.06 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC048A Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
2.07 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
9.06 tons PE/year

Applicable Compliance Method:
As long as compliance with the hourly emission limitation is maintained, compliance with the annual emission limitation shall be ensured (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

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: 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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 2.49 lbs OC/hr, 2.06 tons OC/year 0.80 lb PE/hr, 0.55 ton 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	80.2 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 2.49 lbs OC/hr, 2.06 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.80 lb PE/hr, 0.55 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 80.2 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-7239, issued 7/28/93)	0.36 lb PE/hr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC076A Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-7239, issued 7/28/93)	0.62 lb PE/hr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC078 Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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 #900	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-7239, issued 7/28/93)	0.52 lb PE/hr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC077A Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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)	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-7198)	0.73 lb PE/hr, 3.20 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC047 Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
3.20 tons PE/year

Applicable Compliance Method:
As long as compliance with the hourly emission limitation is maintained, compliance with the annual emission limitation shall be ensured (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

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 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)	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-7217)	1.17 lbs PE/hr, 5.12 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors:DC014A Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
1.17 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
5.12 tons PE/year

Applicable Compliance Method:
As long as compliance with the hourly emission limitation is maintained, compliance with the annual emission limitation shall be ensured (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

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 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)	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-7217)	1.46 lbs PE/hr, 6.39 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC014A Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
1.46 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
6.39 tons PE/year

Applicable Compliance Method:
As long as compliance with the hourly emission limitation is maintained, compliance with the annual emission limitation shall be ensured (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

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 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 # 68 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 4.02 lbs OC/hr, 3.70 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand for the main stack.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand and 0.0000665 lb OC/lb sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 3.05 lbs PE/hr, 2.12 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 92 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 91 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 85 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 7.42 lbs OC/hr, 6.83 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 5.63 lbs PE/hr, 3.91 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 86 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 7.42 lbs OC/hr, 6.83 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 5.63 lbs PE/hr, 3.91 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 87 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 7.42 lbs OC/hr, 6.83 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 5.63 lbs PE/hr, 3.91 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 88 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 7.42 lbs OC/hr, 6.83 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 5.63 lbs PE/hr, 3.91 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 lbs 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	171 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight determination which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit which is used in the process weight determination would be the sand core. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuels used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.70 lbs OC/hr, 6.36 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.47 lbs PE/hr, 1.70 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 171 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 1.02 lbs NOx/hr, 1.67 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.86 lb CO/hr, 1.40 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 5	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.d.
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	168 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

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 from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.70 lbs OC/hr, 6.36 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.47 lbs PE/hr, 1.70 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 168 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 lbs 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	171 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.70 lbs OC/hr, 6.36 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.47 lbs PE/hr, 1.70 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 171 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 1.02 lbs NOx/hr, 1.67 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.86 lb CO/hr, 1.40 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 89 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 6.12 lbs OC/hr, 5.63 tons OC/year (see A.I.2.c) 1.28 lbs PE/hr, 1.16 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 6.12 lbs OC/hr, 5.63 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.28 lbs PE/hr, 1.16 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-8574)	4.73 lbs PE/hr, 20.72 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC081 Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
4.73 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
20.72 tons PE/year

Applicable Compliance Method:
As long as compliance with the hourly emission limitation is maintained, compliance with the annual emission limitation shall be ensured (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

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 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)	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-8574)	2.07 lbs PE/hr, 9.07 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC081 Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
2.07 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
9.07 tons PE/year

Applicable Compliance Method:
As long as compliance with the hourly emission limitation is maintained, compliance with the annual emission limitation shall be ensured (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

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 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
FN2 head shaker	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-8574)	11.97 lbs PE/hr, 52.43 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors:DC008 Plt1, DC-011A Plt1, DC013 Plt1, DC013A Plt1 and DC081 Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
11.97 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
52.43 tons PE/year

Applicable Compliance Method:
As long as compliance with the hourly emission limitation is maintained, compliance with the annual emission limitation shall be ensured (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

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 #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 # 96 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	62.2 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates negligible amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight determination which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit which are used in the process weight determination would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) will yield a high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuels used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 30.44 lbs OC/hr, 26.18 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 3.59 lbs PE/hr, 2.27 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 62.2 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 97 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	62.2 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates negligible amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight determination which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit which are used in the process weight determination would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) will yield a high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuels used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 30.44 lbs OC/hr, 26.18 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 3.59 lbs PE/hr, 2.27 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 62.2 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 98 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	62.2 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates negligible amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight determination which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit which are used in the process weight determination would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) will yield a high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuels used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 30.44 lbs OC/hr, 26.18 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 3.59 lbs PE/hr, 2.27 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 62.2 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 99 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	62.2 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates negligible amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight determination which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit which are used in the process weight determination would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) will yield a high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuels used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 30.44 lbs OC/hr, 26.18 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 3.59 lbs PE/hr, 2.27 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 62.2 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 8.03 lbs OC/hr, 7.40 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 6.10 lbs PE/hr, 4.24 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 100/101 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 60.89 lb OC/hr, 52.36 tons OC/year (includes conveyor emissions) 7.18 lbs PE/hr, 4.54 tons PE/yr 0.43 lb nitrogen oxide (NOx)/hr, 1.06 tons NOx/yr
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-18-06(E)	99 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE, CO, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 60.89 lb OC/hr, 52.36 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 7.18 lbs PE/hr, 4.54 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 99 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.43 lb NOx/hr, 1.06 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 4.22 lbs OC/hr, 3.49 tons OC/year 1.35 lbs PE/hr, 0.93 ton PE/yr 0.47 lb carbon monoxide (CO)/hr, 0.77 ton CO/yr 0.56 lb nitrogen oxides (NOx)/hr, 0.91 ton 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	114 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 4.22 lbs OC/hr, 3.49 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.35 lbs PE/hr, 0.93 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 114 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.56 lb NOx/hr, 0.91 ton NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.47 lb CO/hr, 0.77 ton CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-9233, issued 7/21/93)	0.52 lb PE/hr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC-084 Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #03-9233, issued 7/21/93)	0.52 lb PE/hr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC-084 Plt1

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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: 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 # 104/105/106 (loramendi cell no. 4, three station machine) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 10.20 lbs OC/hr, 9.39 tons OC/year (see A.I.2.c) 2.14 lbs PE/hr, 1.93 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 10.20 lbs OC/hr, 9.39 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.14 lbs PE/hr, 1.93 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 107/108/109 (loramendi cell no. 5, three station machine) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 10.20 lbs OC/hr, 9.39 tons OC/year (see A.I.2.c) 2.14 lbs PE/hr, 1.93 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 10.20 lbs OC/hr, 9.39 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.14 lbs PE/hr, 1.93 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 7.03 lbs OC/hr, 5.81 tons OC/year 2.26 lbs PE/hr, 1.55 ton PE/yr 0.78 lb carbon monoxides (CO)/hr, 1.28 ton CO/yr 0.93 lb nitrogen oxide (NOx)/hr, 1.52 ton 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	161 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.03 lbs OC/hr, 5.81 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.26 lbs PE/hr, 1.55 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 161 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.93 lb NOx/hr, 1.52 ton NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.78 lb CO/hr, 1.28 ton CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 110/111/112 (loramendi cell no. 6, three station machine) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 10.20 lbs OC/hr, 9.39 tons OC/year (see A.I.2.c) 2.14 lbs PE/hr, 1.93 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 10.20 lbs OC/hr, 9.39 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.14 lbs PE/hr, 1.93 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 113/114/115 (loramendi cell no. 7, three station machine) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 10.20 lbs OC/hr, 9.39 tons OC/year (see A.I.2.c) 2.14 lbs PE/hr, 1.93 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 10.20 lbs OC/hr, 9.39 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.14 lbs PE/hr, 1.93 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 7.03 lbs OC/hr, 5.81 tons OC/year 2.26 lbs PE/hr, 1.55 ton PE/yr 0.78 lb carbon monoxides (CO)/hr, 1.28 ton CO/yr 0.93 lb nitrogen oxides (NOx)/hr, 1.52 ton 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	160.78 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight determination which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit which is used in the process weight determination would be the sand core. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuels used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.03 lbs OC/hr, 5.81 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.26 lbs PE/hr, 1.55 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 161 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitations: 0.93 lb NOx/hr, 1.52 ton NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.78 lb CO/hr, 1.28 ton CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 90 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 6.12 lbs OC/hr, 5.63 tons OC/year (see A.I.2.c) 1.28 lbs PE/hr, 1.16 tons PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

III. Monitoring and/or Record Keeping Requirements (continued)

4. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 6.12 lbs OC/hr, 5.63 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (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 the miscellaneous stacks.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand and 0.0000665 lb OC/lb sand for the miscellaneous stacks.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.28 lbs PE/hr, 1.16 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand and 0.000604 lb OC/lb sand for the miscellaneous stacks.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand and 0.000153 lb OC/lb sand for the miscellaneous stacks.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 4.22 lbs OC/hr, 3.49 tons OC/year 1.35 lbs PE/hr, 0.93 ton PE/yr 0.47 lb carbon monoxide (CO)/hr, 0.77 ton CO/yr 0.56 lb nitrogen oxides (NOx)/hr, 0.91 ton 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	114 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 4.22 lbs OC/hr, 3.49 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.35 lbs PE/hr, 0.93 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 114 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.56 lb NOx/hr, 0.91 ton NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation:0.47 lb CO/hr, 0.77 ton CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 116 (loramendi cell no. 8) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 117 (loramendi cell no. 8) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 118 (loramendi cell no. 8) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 ton PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxides (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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	166 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 166 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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(C) (PTI #03-16133, issued 7/01/2004)	46.0 tons volatile organic compounds (VOC)/rolling, 12-month period See A.I.2.a and A.II.2.b below.
	OAC rule 3745-31-05(A)(3) (PTI #03-16133, issued 7/01/2004)	12.0 lbs VOC/hr See A.II.1 below.
	OAC rule 3745-21-07(G)	See A.I.2.c below.

2. Additional Terms and Conditions

2.a The permittee has requested federally enforceable restrictions to limit the potentials to emit for emissions units P407, P408, P409, and P410 by limiting the polystyrene bead usage. The annual VOC emissions for emissions units P407, P408, P409 and P410, combined, shall not exceed 46.0 tons/rolling, 12-month period.

2.b The 12.0 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 any additional monitoring, record keeping and/or reporting requirements to ensure compliance with this emission 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 7.0 percent, by weight, based on a monthly, weighted average.

II. Operational Restrictions (continued)

2. The maximum annual polystyrene bead throughput for emissions units P407, P408, P409, and P410, combined, shall not exceed 1,839,600 pounds per rolling, 12-month period.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the permittee shall not exceed the bead throughput levels specified in the following table:

Month(s)	Maximum Cumulative Bead throughput (lbs)
1	153,300
1-2	306,600
1-3	459,900
1-4	613,200
1-5	766,500
1-6	919,800
1-7	1,073,100
1-8	1,226,400
1-9	1,379,700
1-10	1,533,000
1-11	1,686,300
1-12	1,839,600

After the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, compliance with the annual bead throughput shall be based upon a rolling, 12-month summation of the total monthly bead throughput rates.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall calculate and maintain monthly records of the following information for emissions units P407, P408, P409, and P410, combined:

a. the company identification for each lot* of polystyrene beads processed;

b. the VOC content of the polystyrene beads, in weight percent, for each batch processed;

c. the amount of polystyrene beads processed, in pounds, for each batch processed;

d. the total amount of VOC input, in pounds, for all the polystyrene beads processed [summation of (A.III.1.b x A.III.1.c) for all batches];

e. the total amount of polystyrene beads processed, in pounds (summation of A.III.1.c for all batches);

f. the monthly, weighted average VOC content, in weight percent, for the all the polystyrene beads processed, calculated as follows:

Cvoc(avg) = [(total VOC input, from section A.III.1.d)/(total polystyrene beads processed, from section A.III.1.e)] x 100

where:

Cvoc = the monthly, weighted average VOC content, in wt%

g. for the first 12 months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the monthly, cumulative amounts of polystyrene beads processed, in pounds;

h. after the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the rolling, 12-month polystyrene beads processed rate;

i. the calculated VOC emission rate, in tons [the value from section A.III.1.d, divided by 2000 lbs/ton]; and

j. after the first 12 months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the rolling, 12-month VOC emission rate, in tons.

*[The VOC content is determined for each lot with many batches of polystyrene beads being processed from a lot. All batches from the same lot are, therefore, assumed to have the same VOC content]

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 months of operation under the provisions of PTI# 03-16133, all exceedances of the allowable monthly, cumulative bead usage rates;

b. after the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, all exceedances of the rolling, 12-month polystyrene beads processed rate of 1,839,600 pounds (for emissions units P407, P408, P409 and P410, combined);

c. all exceedances of the rolling, 12-month VOC emission limitation of 46.0 tons (for emissions units P407, P408, P409 and P410, combined); and

d. all exceedances of the weighted monthly average VOC content of the polystyrene beads of 7 percent, by weight.

IV. Reporting Requirements (continued)

2. The permittee shall submit annual reports that summarize the actual annual VOC emissions for this emissions unit and for emissions units P407, P408, P409 and P410, combined, for the previous calendar year. The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for emissions units P407, P408, P409 and P410, combined, in the annual Fee Emission Report.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 1 month of issuance of modified PTI #03-13364, issued 7/1/04. Further future testing shall be conducted in accordance with Engineering Guide #16.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for VOC.

c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rate: for VOC, Methods 1-4 and 18, 25, or 25A, as appropriate, 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 Northwest District Office.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. 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: 46.0 tons VOC per rolling, 12-month period

Applicable Compliance Method: Compliance with the rolling, 12-month VOC emission limitation shall be determined based on the record keeping requirements specified in section A.III.1 of the terms and conditions of this permit.

3.b Emission Limitation: 12.0 lbs VOC/hr

Applicable Compliance Method: If required, compliance with the hourly allowable VOC emission limitation shall be based on the results of emission testing conducted in accordance with USEPA Methods 1 - 4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-16133, issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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(C) (PTI #03-16133, issued 7/01/2004)	46.0 tons volatile organic compounds (VOC)/rolling, 12-month period See A.I.2.a and A.II.2.b below.
	OAC rule 3745-31-05(A)(3) (PTI #03-16133, issued 7/01/2004)	24.0 lbs VOC/hr See A.II.1 below.
	OAC rule 3745-21-07(G)	See A.I.2.c below.

2. Additional Terms and Conditions

2.a The permittee has requested federally enforceable restrictions to limit the potentials to emit for emissions units P407, P408, P409, and P410 by limiting the polystyrene bead usage. The annual VOC emissions for emissions units P407, P408, P409 and P410, combined, shall not exceed 46.0 tons/rolling, 12-month period.

2.b The 24.0 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 any additional monitoring, record keeping and/or reporting requirements to ensure compliance with this emission 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 7.0 percent, by weight, based on a monthly, weighted average.

II. Operational Restrictions (continued)

2. The maximum annual polystyrene bead throughput for emissions units P407, P408, P409, and P410, combined, shall not exceed 1,839,600 pounds per rolling, 12-month period.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the permittee shall not exceed the bead throughput levels specified in the following table:

Month(s)	Maximum Cumulative Bead throughput (lbs)
1	153,300
1-2	306,600
1-3	459,900
1-4	613,200
1-5	766,500
1-6	919,800
1-7	1,073,100
1-8	1,226,400
1-9	1,379,700
1-10	1,533,000
1-11	1,686,300
1-12	1,839,600

After the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, compliance with the annual bead throughput shall be based upon a rolling, 12-month summation of the total monthly bead throughput rates.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall calculate and maintain monthly records of the following information for emissions units P407, P408, P409, and P410, combined:

a. the company identification for each lot* of polystyrene beads processed;

b. the VOC content of the polystyrene beads, in weight percent, for each batch processed;

c. the amount of polystyrene beads processed, in pounds, for each batch processed;

d. the total amount of VOC input, in pounds, for all the polystyrene beads processed [summation of (A.III.1.b x A.III.1.c) for all batches];

e. the total amount of polystyrene beads processed, in pounds (summation of A.III.1.c for all batches);

f. the monthly, weighted average VOC content, in weight percent, for the all the polystyrene beads processed, calculated as follows:

Cvoc(avg) = [(total VOC input, from section A.III.1.d)/(total polystyrene beads processed, from section A.III.1.e)] x 100

where:

Cvoc = the monthly, weighted average VOC content, in wt%

g. for the first 12 months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the monthly, cumulative amounts of polystyrene beads processed, in pounds;

h. after the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the rolling, 12-month polystyrene beads processed rate;

i. the calculated VOC emission rate, in tons [the value from section A.III.1.d, divided by 2000 lbs/ton]; and

j. after the first 12 months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the rolling, 12-month VOC emission rate, in tons.

*[The VOC content is determined for each lot with many batches of polystyrene beads being processed from a lot. All batches from the same lot are, therefore, assumed to have the same VOC content]

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 months of operation under the provisions of PTI# 03-16133, all exceedances of the allowable monthly, cumulative bead usage rates;

b. after the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, all exceedances of the rolling, 12-month polystyrene beads processed rate of 1,839,600 pounds (for emissions units P407, P408, P409 and P410, combined);

c. all exceedances of the rolling, 12-month VOC emission limitation of 46.0 tons (for emissions units P407, P408, P409 and P410, combined); and

d. all exceedances of the weighted monthly average VOC content of the polystyrene beads of 7 percent, by weight.

IV. Reporting Requirements (continued)

2. The permittee shall submit annual reports that summarize the actual annual VOC emissions for this emissions unit and for emissions units P407, P408, P409 and P410, combined, for the previous calendar year. The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for emissions units P407, P408, P409 and P410, combined, in the annual Fee Emission Report.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 1 month of issuance of modified PTI #03-13364, issued 7/1/04. Further future testing shall be conducted in accordance with Engineering Guide #16.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for VOC.

c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rate: for VOC, Methods 1-4 and 18, 25, or 25A, as appropriate, 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 Northwest District Office.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. 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: 46.0 tons VOC per rolling, 12-month period

Applicable Compliance Method: Compliance with the rolling, 12-month VOC emission limitation shall be determined based on the record keeping requirements specified in section A.III.1 of the terms and conditions of this permit.

3.b Emission Limitation: 24.0 lbs VOC/hr

Applicable Compliance Method: If required, compliance with the hourly allowable VOC emission limitation shall be based on the results of emission testing conducted in accordance with USEPA Methods 1 - 4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-16133, issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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(C) (PTI #03-16133, issued 7/01/2004)	46.0 tons volatile organic compounds (VOC)/rolling, 12-month period See A.I.2.a and A.II.2.b below.
	OAC rule 3745-31-05(A)(3) (PTI #03-16133, issued 7/01/2004)	12.0 lbs VOC/hr See A.II.1 below.
	OAC rule 3745-21-07(G)	See A.I.2.c below.

2. Additional Terms and Conditions

2.a The permittee has requested federally enforceable restrictions to limit the potentials to emit for emissions units P407, P408, P409, and P410 by limiting the polystyrene bead usage. The annual VOC emissions for emissions units P407, P408, P409 and P410, combined, shall not exceed 46.0 tons/rolling, 12-month period.

2.b The 12.0 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 any additional monitoring, record keeping and/or reporting requirements to ensure compliance with this emission 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 7.0 percent, by weight, based on a monthly, weighted average.

II. Operational Restrictions (continued)

2. The maximum annual polystyrene bead throughput for emissions units P407, P408, P409, and P410, combined, shall not exceed 1,839,600 pounds per rolling, 12-month period.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the permittee shall not exceed the bead throughput levels specified in the following table:

Month(s)	Maximum Cumulative Bead throughput (lbs)
1	153,300
1-2	306,600
1-3	459,900
1-4	613,200
1-5	766,500
1-6	919,800
1-7	1,073,100
1-8	1,226,400
1-9	1,379,700
1-10	1,533,000
1-11	1,686,300
1-12	1,839,600

After the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, compliance with the annual bead throughput shall be based upon a rolling, 12-month summation of the total monthly bead throughput rates.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall calculate and maintain monthly records of the following information for emissions units P407, P408, P409, and P410, combined:

a. the company identification for each lot* of polystyrene beads processed;

b. the VOC content of the polystyrene beads, in weight percent, for each batch processed;

c. the amount of polystyrene beads processed, in pounds, for each batch processed;

d. the total amount of VOC input, in pounds, for all the polystyrene beads processed [summation of (A.III.1.b x A.III.1.c) for all batches];

e. the total amount of polystyrene beads processed, in pounds (summation of A.III.1.c for all batches);

f. the monthly, weighted average VOC content, in weight percent, for the all the polystyrene beads processed, calculated as follows:

Cvoc(avg) = [(total VOC input, from section A.III.1.d)/(total polystyrene beads processed, from section A.III.1.e)] x 100

where:

Cvoc = the monthly, weighted average VOC content, in wt%

g. for the first 12 months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the monthly, cumulative amounts of polystyrene beads processed, in pounds;

h. after the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the rolling, 12-month polystyrene beads processed rate;

i. the calculated VOC emission rate, in tons [the value from section A.III.1.d, divided by 2000 lbs/ton]; and

j. after the first 12 months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the rolling, 12-month VOC emission rate, in tons.

*[The VOC content is determined for each lot with many batches of polystyrene beads being processed from a lot. All batches from the same lot are, therefore, assumed to have the same VOC content]

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 months of operation under the provisions of PTI# 03-16133, all exceedances of the allowable monthly, cumulative bead usage rates;

b. after the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, all exceedances of the rolling, 12-month polystyrene beads processed rate of 1,839,600 pounds (for emissions units P407, P408, P409 and P410, combined);

c. all exceedances of the rolling, 12-month VOC emission limitation of 46.0 tons (for emissions units P407, P408, P409 and P410, combined); and

d. all exceedances of the weighted monthly average VOC content of the polystyrene beads of 7 percent, by weight.

IV. Reporting Requirements (continued)

2. The permittee shall submit annual reports that summarize the actual annual VOC emissions for this emissions unit and for emissions units P407, P408, P409 and P410, combined, for the previous calendar year. The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for emissions units P407, P408, P409 and P410, combined, in the annual Fee Emission Report.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for VOC.

c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rate: for VOC, Methods 1-4 and 18, 25, or 25A, as appropriate, 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 Northwest District Office.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. 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: 46.0 tons VOC per rolling, 12-month period

Applicable Compliance Method: Compliance with the rolling, 12-month VOC emission limitation shall be determined based on the record keeping requirements specified in section A.III.1 of the terms and conditions of this permit.

3.b Emission Limitation: 12.0 lbs VOC/hr

Applicable Compliance Method: If required, compliance with the hourly allowable VOC emission limitation shall be based on the results of emission testing conducted in accordance with USEPA Methods 1 - 4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-16133, issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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(C) (PTI #03-16133, issued 7/01/2004)	46.0 tons volatile organic compounds (VOC)/rolling, 12-month period See A.I.2.a and A.II.2.b below.
	OAC rule 3745-31-05(A)(3) (PTI #03-16133, issued 7/01/2004)	24.0 lbs VOC/hr See A.II.1 below.
	OAC rule 3745-21-07(G)	See A.I.2.c below.

2. Additional Terms and Conditions

2.a The permittee has requested federally enforceable restrictions to limit the potentials to emit for emissions units P407, P408, P409, and P410 by limiting the polystyrene bead usage. The annual VOC emissions for emissions units P407, P408, P409 and P410, combined, shall not exceed 46.0 tons/rolling, 12-month period.

2.b The 24.0 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 any additional monitoring, record keeping and/or reporting requirements to ensure compliance with this emission 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 7.0 percent, by weight, based on a monthly, weighted average.

II. Operational Restrictions (continued)

2. The maximum annual polystyrene bead throughput for emissions units P407, P408, P409, and P410, combined, shall not exceed 1,839,600 pounds per rolling, 12-month period.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the permittee shall not exceed the bead throughput levels specified in the following table:

Month(s)	Maximum Cumulative Bead throughput (lbs)
1	153,300
1-2	306,600
1-3	459,900
1-4	613,200
1-5	766,500
1-6	919,800
1-7	1,073,100
1-8	1,226,400
1-9	1,379,700
1-10	1,533,000
1-11	1,686,300
1-12	1,839,600

After the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, compliance with the annual bead throughput shall be based upon a rolling, 12-month summation of the total monthly bead throughput rates.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall calculate and maintain monthly records of the following information for emissions units P407, P408, P409, and P410, combined:

a. the company identification for each lot* of polystyrene beads processed;

b. the VOC content of the polystyrene beads, in weight percent, for each batch processed;

c. the amount of polystyrene beads processed, in pounds, for each batch processed;

d. the total amount of VOC input, in pounds, for all the polystyrene beads processed [summation of (A.III.1.b x A.III.1.c) for all batches];

e. the total amount of polystyrene beads processed, in pounds (summation of A.III.1.c for all batches);

f. the monthly, weighted average VOC content, in weight percent, for the all the polystyrene beads processed, calculated as follows:

Cvoc(avg) = [(total VOC input, from section A.III.1.d)/(total polystyrene beads processed, from section A.III.1.e)] x 100

where:

Cvoc = the monthly, weighted average VOC content, in wt%

g. for the first 12 months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the monthly, cumulative amounts of polystyrene beads processed, in pounds;

h. after the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the rolling, 12-month polystyrene beads processed rate;

i. the calculated VOC emission rate, in tons [the value from section A.III.1.d, divided by 2000 lbs/ton]; and

j. after the first 12 months of operation under the provisions of PTI# 03-16133, issued 7/1/04, the rolling, 12-month VOC emission rate, in tons.

*[The VOC content is determined for each lot with many batches of polystyrene beads being processed from a lot. All batches from the same lot are, therefore, assumed to have the same VOC content]

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 months of operation under the provisions of PTI# 03-16133, all exceedances of the allowable monthly, cumulative bead usage rates;

b. after the first 12 calendar months of operation under the provisions of PTI# 03-16133, issued 7/1/04, all exceedances of the rolling, 12-month polystyrene beads processed rate of 1,839,600 pounds (for emissions units P407, P408, P409 and P410, combined);

c. all exceedances of the rolling, 12-month VOC emission limitation of 46.0 tons (for emissions units P407, P408, P409 and P410, combined); and

d. all exceedances of the weighted monthly average VOC content of the polystyrene beads of 7 percent, by weight.

IV. Reporting Requirements (continued)

2. The permittee shall submit annual reports that summarize the actual annual VOC emissions for this emissions unit and for emissions units P407, P408, P409 and P410, combined, for the previous calendar year. The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for emissions units P407, P408, P409 and P410, combined, in the annual Fee Emission Report.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for VOC.

c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rate: for VOC, Methods 1-4 and 18, 25, or 25A, as appropriate, 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 Northwest District Office.

2. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. 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: 46.0 tons VOC per rolling, 12-month period

Applicable Compliance Method: Compliance with the rolling, 12-month VOC emission limitation shall be determined based on the record keeping requirements specified in section A.III.1 of the terms and conditions of this permit.

3.b Emission Limitation: 24.0 lbs VOC/hr

Applicable Compliance Method: If required, compliance with the hourly allowable VOC emission limitation shall be based on the results of emission testing conducted in accordance with USEPA Methods 1 - 4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-16133, issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	duct burner emissions: 13.61 tons nitrogen oxides (NOx) per rolling, 12-month period See A.I.2.b and A.I.2.d below. RCO emissions: 6.93 tons NOx per rolling, 12-month period See A.I.2.b and A.I.2.d below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-23-06(B), 3745-21-08(B) and 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 lb volatile organic compounds (VOC)/hr, 1.8 tons VOC/yr 1.2 lbs particulate emissions (PE)/hr, 5.26 tons PE/yr

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 PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. the use of duct burners equipped with low NOx burners and designed to emit NOx at a rate of no more than 80 lbs/mm cu. ft of natural gas burned; and

ii. the use of a RCO equipped with low NOx burners and designed to emit NOx at a rate of no more than 110 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions from the duct burners (for emissions units P411, P412, P413, and P414, combined) shall not exceed 13.61 tons/rolling, 12-month period. Also, the annual NOx emissions from the RCO (for emissions units P411, P412, P413, and P414, combined) shall not exceed 6.93 tons/rolling, 12-month period.

2.c The PE limitations are inclusive of and assumed to be PM10.

2.d The rolling, 12-month NOx emission limitations specified in section A.I.2.b above were calculated based on the natural gas usage restriction rates for the duct burners and the RCO (for emissions units P411, P412, P413 and P414, combined) specified in sections A.III.1 and A.III.2, respectively.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

II. Operational Restrictions

1. The maximum annual natural gas usage for the duct burners (for emissions units P411, P412, P413 and P414, combined) shall not exceed 340.2 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI #03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table for the duct burners (for emissions units P411, P412, P413, and P414, combined):

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	28
1-2	57
1-3	85
1-4	114
1-5	142
1-6	170
1-7	199
1-8	227
1-9	256
1-10	284
1-11	312
1-12	340.2

After the first 12 calendar months of operation under the provisions of PTI #03-13364 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month period.

2. The maximum annual natural gas usage for the RCO (for emissions units P411, P412, P413, and P414, combined) shall not exceed 126 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, the permittee shall not exceed the natural gas usage levels, for the RCO (for emissions units P411, P412, P413, and P414, combined) specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	10.5
1-2	21.0
1-3	31.5
1-4	42.0
1-5	52.5
1-6	63.0
1-7	73.5
1-8	84.0
1-9	94.5
1-10	105.0
1-11	115.5
1-12	126.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

3. The temperature of the RCO catalyst bed shall not be less than 650 degrees Fahrenheit when the emissions unit is in operation.

II. Operational Restrictions (continued)

4. To ensure proper operation of the emissions unit, the permittee shall employ a "interlock system" that will shut down the emissions unit when the catalyst bed temperature in the RCO falls below 650 degrees Fahrenheit or when the catalyst bed temperature monitoring devices associated with emissions unit fail.

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 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 the duct burners, in mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates in all the duct burners, in mm cu. ft;

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates in all the duct burners, in mm cu. ft;

d. the quantity of natural gas combusted in the RCO, in mm cu. ft;

e. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates in the RCO, in mm cu. ft; and

f. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates in the RCO, in mm cu. ft.

2. The permittee shall operate and maintain continuous temperature monitors and recorder(s) which measure and record(s) the temperature of the RCO's catalyst bed 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 monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the catalyst bed temperature in the RCO fell below 650 degrees Fahrenheit and/or when the catalyst bed temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter.

4. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for all the duct burners; and

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for all the duct burners and RCO (for emissions units P411, P412, P413 and P414, combined) of 340.2 mm cu. ft and 126 mm cu. ft, respectively; and

c. all periods of time when the catalyst bed temperature in the RCO fell below 650 degrees Fahrenheit and/or when the catalyst bed temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 methods:

1.a Emission Limitation: 13.61 tons NOx per rolling, 12-month period, from all the duct burners for emissions units P411, P412, P413, and P414, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 80 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.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 NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.f) by the BACT emission limitation of 110 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.c Emission Limitations: 2.27 lbs NOx/hr (for this emissions unit), 80 lbs NOx/mm cu. ft (for the duct burners), 110 lbs NOx/mm cu. ft (for the RCO), 9.94 tons NOx/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitations shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.d Emission Limitations: 2.1 lbs CO/hr, 9.2 tons CO/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.e Emission Limitations: 0.41 lb VOC/hr, 1.8 tons VOC/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly VOC emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

Compliance with the annual VOC emission limitation shall be assumed as long as compliance with the hourly VOC emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.f Emission Limitations: 1.2 lbs PE/hr, 5.26 tons PE/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

Compliance with the annual PE limitation shall be assumed as long as compliance with the hourly PE limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.g 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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
castline (aluminum pouring, cooling, cleaning, & sand shakeout) with baghouse, regenerative catalytic oxidizer (RCO), and duct burner - cell #1	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 baghouse, regenerative catalytic oxidizer (RCO), and duct burner - cell #2	40 CFR Part 52.21 OAC rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	duct burner emissions: 13.61 tons nitrogen oxides (NOx) per rolling, 12-month period See A.I.2.b and A.I.2.d below. RCO emissions: 6.93 tons NOx per rolling, 12-month period See A.I.2.b and A.I.2.d below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-23-06(B), 3745-21-08(B) and 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 lb volatile organic compounds (VOC)/hr, 1.8 tons VOC/yr 1.2 lbs particulate emissions (PE)/hr, 5.26 tons PE/yr

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 PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. the use of duct burners equipped with low NOx burners and designed to emit NOx at a rate of no more than 80 lbs/mm cu. ft of natural gas burned; and

ii. the use of a RCO equipped with low NOx burners and designed to emit NOx at a rate of no more than 110 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions from the duct burners (for emissions units P411, P412, P413, and P414, combined) shall not exceed 13.61 tons/rolling, 12-month period. Also, the annual NOx emissions from the RCO (for emissions units P411, P412, P413, and P414, combined) shall not exceed 6.93 tons/rolling, 12-month period.

2.c The PE limitations are inclusive of and assumed to be PM10.

2.d The rolling, 12-month NOx emission limitations specified in section A.I.2.b above were calculated based on the natural gas usage restriction rates for the duct burners and the RCO (for emissions units P411, P412, P413 and P414, combined) specified in sections A.III.1 and A.III.2, respectively.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

II. Operational Restrictions

1. The maximum annual natural gas usage for the duct burners (for emissions units P411, P412, P413 and P414, combined) shall not exceed 340.2 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI #03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table for the duct burners (for emissions units P411, P412, P413, and P414, combined):

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	28
1-2	57
1-3	85
1-4	114
1-5	142
1-6	170
1-7	199
1-8	227
1-9	256
1-10	284
1-11	312
1-12	340.2

After the first 12 calendar months of operation under the provisions of PTI #03-13364 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month period.

2. The maximum annual natural gas usage for the RCO (for emissions units P411, P412, P413, and P414, combined) shall not exceed 126 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, the permittee shall not exceed the natural gas usage levels, for the RCO (for emissions units P411, P412, P413, and P414, combined) specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	10.5
1-2	21.0
1-3	31.5
1-4	42.0
1-5	52.5
1-6	63.0
1-7	73.5
1-8	84.0
1-9	94.5
1-10	105.0
1-11	115.5
1-12	126.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

3. The temperature of the RCO catalyst bed shall not be less than 650 degrees Fahrenheit when the emissions unit is in operation.

II. Operational Restrictions (continued)

4. To ensure proper operation of the emissions unit, the permittee shall employ a "interlock system" that will shut down the emissions unit when the catalyst bed temperature in the RCO falls below 650 degrees Fahrenheit or when the catalyst bed temperature monitoring devices associated with emissions unit fail.

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 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 the duct burners, in mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates in all the duct burners, in mm cu. ft;

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates in all the duct burners, in mm cu. ft;

d. the quantity of natural gas combusted in the RCO, in mm cu. ft;

e. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates in the RCO, in mm cu. ft; and

f. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates in the RCO, in mm cu. ft.

2. The permittee shall operate and maintain continuous temperature monitors and recorder(s) which measure and record(s) the temperature of the RCO's catalyst bed 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 monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the catalyst bed temperature in the RCO fell below 650 degrees Fahrenheit and/or when the catalyst bed temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter.

4. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for all the duct burners; and

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for all the duct burners and RCO (for emissions units P411, P412, P413 and P414, combined) of 340.2 mm cu. ft and 126 mm cu. ft, respectively; and

c. all periods of time when the catalyst bed temperature in the RCO fell below 650 degrees Fahrenheit and/or when the catalyst bed temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 methods:

1.a Emission Limitation: 13.61 tons NOx per rolling, 12-month period, from all the duct burners for emissions units P411, P412, P413, and P414, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 80 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.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 NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.f) by the BACT emission limitation of 110 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.c Emission Limitations: 2.27 lbs NOx/hr (for this emissions unit), 80 lbs NOx/mm cu. ft (for the duct burners), 110 lbs NOx/mm cu. ft (for the RCO), 9.94 tons NOx/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitations shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.d Emission Limitations: 2.1 lbs CO/hr, 9.2 tons CO/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.e Emission Limitations: 0.41 lb VOC/hr, 1.8 tons VOC/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly VOC emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

Compliance with the annual VOC emission limitation shall be assumed as long as compliance with the hourly VOC emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.f Emission Limitations: 1.2 lbs PE/hr, 5.26 tons PE/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

Compliance with the annual PE limitation shall be assumed as long as compliance with the hourly PE limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.g 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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
castline (aluminum pouring, cooling, cleaning, & sand shakeout) with baghouse, regenerative catalytic oxidizer (RCO), and duct burner - cell #2	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 baghouse, regenerative catalytic oxidizer (RCO), and duct burner - cell #3	40 CFR Part 52.21 OAC rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	duct burner emissions: 13.61 tons nitrogen oxides (NOx) per rolling, 12-month period See A.I.2.b and A.I.2.d below. RCO emissions: 6.93 tons NOx per rolling, 12-month period See A.I.2.b and A.I.2.d below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-23-06(B), 3745-21-08(B) and 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 lb volatile organic compounds (VOC)/hr, 1.8 tons VOC/yr 1.2 lbs particulate emissions (PE)/hr, 5.26 tons PE/yr

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 PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. the use of duct burners equipped with low NOx burners and designed to emit NOx at a rate of no more than 80 lbs/mm cu. ft of natural gas burned; and

ii. the use of a RCO equipped with low NOx burners and designed to emit NOx at a rate of no more than 110 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions from the duct burners (for emissions units P411, P412, P413, and P414, combined) shall not exceed 13.61 tons/rolling, 12-month period. Also, the annual NOx emissions from the RCO (for emissions units P411, P412, P413, and P414, combined) shall not exceed 6.93 tons/rolling, 12-month period.

2.c The PE limitations are inclusive of and assumed to be PM10.

2.d The rolling, 12-month NOx emission limitations specified in section A.I.2.b above were calculated based on the natural gas usage restriction rates for the duct burners and the RCO (for emissions units P411, P412, P413 and P414, combined) specified in sections A.III.1 and A.III.2, respectively.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

II. Operational Restrictions

1. The maximum annual natural gas usage for the duct burners (for emissions units P411, P412, P413 and P414, combined) shall not exceed 340.2 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI #03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table for the duct burners (for emissions units P411, P412, P413, and P414, combined):

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	28
1-2	57
1-3	85
1-4	114
1-5	142
1-6	170
1-7	199
1-8	227
1-9	256
1-10	284
1-11	312
1-12	340.2

After the first 12 calendar months of operation under the provisions of PTI #03-13364 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month period.

2. The maximum annual natural gas usage for the RCO (for emissions units P411, P412, P413, and P414, combined) shall not exceed 126 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, the permittee shall not exceed the natural gas usage levels, for the RCO (for emissions units P411, P412, P413, and P414, combined) specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	10.5
1-2	21.0
1-3	31.5
1-4	42.0
1-5	52.5
1-6	63.0
1-7	73.5
1-8	84.0
1-9	94.5
1-10	105.0
1-11	115.5
1-12	126.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

3. The temperature of the RCO catalyst bed shall not be less than 650 degrees Fahrenheit when the emissions unit is in operation.

II. Operational Restrictions (continued)

4. To ensure proper operation of the emissions unit, the permittee shall employ a "interlock system" that will shut down the emissions unit when the catalyst bed temperature in the RCO falls below 650 degrees Fahrenheit or when the catalyst bed temperature monitoring devices associated with emissions unit fail.

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 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 the duct burners, in mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates in all the duct burners, in mm cu. ft;

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates in all the duct burners, in mm cu. ft;

d. the quantity of natural gas combusted in the RCO, in mm cu. ft;

e. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates in the RCO, in mm cu. ft; and

f. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates in the RCO, in mm cu. ft.

2. The permittee shall operate and maintain continuous temperature monitors and recorder(s) which measure and record(s) the temperature of the RCO's catalyst bed 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 monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the catalyst bed temperature in the RCO fell below 650 degrees Fahrenheit and/or when the catalyst bed temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter.

4. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for all the duct burners; and

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for all the duct burners and RCO (for emissions units P411, P412, P413 and P414, combined) of 340.2 mm cu. ft and 126 mm cu. ft, respectively; and

c. all periods of time when the catalyst bed temperature in the RCO fell below 650 degrees Fahrenheit and/or when the catalyst bed temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 methods:

1.a Emission Limitation: 13.61 tons NOx per rolling, 12-month period, from all the duct burners for emissions units P411, P412, P413, and P414, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 80 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.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 NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.f) by the BACT emission limitation of 110 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.c Emission Limitations: 2.27 lbs NOx/hr (for this emissions unit), 80 lbs NOx/mm cu. ft (for the duct burners), 110 lbs NOx/mm cu. ft (for the RCO), 9.94 tons NOx/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitations shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.d Emission Limitations: 2.1 lbs CO/hr, 9.2 tons CO/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.e Emission Limitations: 0.41 lb VOC/hr, 1.8 tons VOC/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly VOC emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

Compliance with the annual VOC emission limitation shall be assumed as long as compliance with the hourly VOC emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.f Emission Limitations: 1.2 lbs PE/hr, 5.26 tons PE/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

Compliance with the annual PE limitation shall be assumed as long as compliance with the hourly PE limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.g 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months prior to permit renewal.

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)

3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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
castline (aluminum pouring, cooling, cleaning, & sand shakeout) with baghouse, regenerative catalytic oxidizer (RCO), and duct burner - cell #3	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 baghouse, regenerative catalytic oxidizer (RCO), and duct burner - cell #4	40 CFR Part 52.21 OAC rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	duct burner emissions: 13.61 tons nitrogen oxides (NOx) per rolling, 12-month period See A.I.2.b and A.I.2.d below. RCO emissions: 6.93 tons NOx per rolling, 12-month period See A.I.2.b and A.I.2.d below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-23-06(B), 3745-21-08(B) and 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 lb volatile organic compounds (VOC)/hr, 1.8 tons VOC/yr 1.2 lbs particulate emissions (PE)/hr, 5.26 tons PE/yr

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 PE shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. the use of duct burners equipped with low NOx burners and designed to emit NOx at a rate of no more than 80 lbs/mm cu. ft of natural gas burned; and

ii. the use of a RCO equipped with low NOx burners and designed to emit NOx at a rate of no more than 110 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions from the duct burners (for emissions units P411, P412, P413, and P414, combined) shall not exceed 13.61 tons/rolling, 12-month period. Also, the annual NOx emissions from the RCO (for emissions units P411, P412, P413, and P414, combined) shall not exceed 6.93 tons/rolling, 12-month period.

2.c The PE limitations are inclusive of and assumed to be PM10.

2.d The rolling, 12-month NOx emission limitations specified in section A.I.2.b above were calculated based on the natural gas usage restriction rates for the duct burners and the RCO (for emissions units P411, P412, P413 and P414, combined) specified in sections A.III.1 and A.III.2, respectively.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

II. Operational Restrictions

1. The maximum annual natural gas usage for the duct burners (for emissions units P411, P412, P413 and P414, combined) shall not exceed 340.2 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI #03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table for the duct burners (for emissions units P411, P412, P413, and P414, combined):

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	28
1-2	57
1-3	85
1-4	114
1-5	142
1-6	170
1-7	199
1-8	227
1-9	256
1-10	284
1-11	312
1-12	340.2

After the first 12 calendar months of operation under the provisions of PTI #03-13364 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month period.

2. The maximum annual natural gas usage for the RCO (for emissions units P411, P412, P413, and P414, combined) shall not exceed 126 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, the permittee shall not exceed the natural gas usage levels, for the RCO (for emissions units P411, P412, P413, and P414, combined) specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	10.5
1-2	21.0
1-3	31.5
1-4	42.0
1-5	52.5
1-6	63.0
1-7	73.5
1-8	84.0
1-9	94.5
1-10	105.0
1-11	115.5
1-12	126.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

3. The temperature of the RCO catalyst bed shall not be less than 650 degrees Fahrenheit when the emissions unit is in operation.

II. Operational Restrictions (continued)

4. To ensure proper operation of the emissions unit, the permittee shall employ a "interlock system" that will shut down the emissions unit when the catalyst bed temperature in the RCO falls below 650 degrees Fahrenheit or when the catalyst bed temperature monitoring devices associated with emissions unit fail.

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 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 the duct burners, in mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates in all the duct burners, in mm cu. ft;

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates in all the duct burners, in mm cu. ft;

d. the quantity of natural gas combusted in the RCO, in mm cu. ft;

e. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates in the RCO, in mm cu. ft; and

f. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates in the RCO, in mm cu. ft.

2. The permittee shall operate and maintain continuous temperature monitors and recorder(s) which measure and record(s) the temperature of the RCO's catalyst bed 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 monitors and recorder(s) shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the catalyst bed temperature in the RCO fell below 650 degrees Fahrenheit and/or when the catalyst bed temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter.

4. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for all the duct burners; and

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for all the duct burners and RCO (for emissions units P411, P412, P413 and P414, combined) of 340.2 mm cu. ft and 126 mm cu. ft, respectively; and

c. all periods of time when the catalyst bed temperature in the RCO fell below 650 degrees Fahrenheit and/or when the catalyst bed temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 methods:

1.a Emission Limitation: 13.61 tons NOx per rolling, 12-month period, from all the duct burners for emissions units P411, P412, P413, and P414, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 80 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.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 NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.f) by the BACT emission limitation of 110 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.c Emission Limitations: 2.27 lbs NOx/hr (for this emissions unit), 80 lbs NOx/mm cu. ft (for the duct burners), 110 lbs NOx/mm cu. ft (for the RCO), 9.94 tons NOx/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitations shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.d Emission Limitations: 2.1 lbs CO/hr, 9.2 tons CO/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.e Emission Limitations: 0.41 lb VOC/hr, 1.8 tons VOC/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly VOC emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

Compliance with the annual VOC emission limitation shall be assumed as long as compliance with the hourly VOC emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.f Emission Limitations: 1.2 lbs PE/hr, 5.26 tons PE/yr (for this emissions unit)

Applicable Compliance Method: If required, compliance with the hourly PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

Compliance with the annual PE limitation shall be assumed as long as compliance with the hourly PE limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.g 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months prior to permit renewal.

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)

3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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
castline (aluminum pouring, cooling, cleaning, & sand shakeout) with baghouse, regenerative catalytic oxidizer (RCO), and duct burner - cell #4	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	6.3 tons nitrogen oxides (NOx)/rolling, 12-month period (from the combustion of natural gas) See A.I.2.b. and A.I.2.d below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-23-06(B), 3745-21-08(B) and 3745-17-07(A). 0.6 lb 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) 1.08 lbs particulate emissions (PE)/hr, 4.73 tons PE/yr (process emissions) See A.II.1 and A.II.3 below.
	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 6-minute average, except as provided by the rule.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. a furnace equipped with low NOx burners and designed to emit NOx at a rate of not more than 100 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions for emissions units P419, P420, P421, and P422, combined, shall not exceed 6.3 tons/rolling, 12-month period.

2.c The 0.13 lb VOC/hr and 1.08 lbs PE/hr emission limitations were established for PTI purposes to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.d The PE limitations are inclusive of and assumed to be PM10.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.f The rolling, 12-month NOx emission limitations specified in section A.I.2.b above were calculated based on the natural gas usage restriction rate (for emissions unitsP419, P420, P421, and P422, combined) specified in section A.II.3 of this permit.

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 a "interlock system" that will shut down the emissions unit when the furnace temperature falls below 1000 degrees Fahrenheit.

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.

II. Operational Restrictions (continued)

3. The maximum annual natural gas usage for emissions units P419, P420, P421, and P422, combined, shall not exceed 126 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	10.5
1-2	21.0
1-3	31.5
1-4	42.0
1-5	52.5
1-6	63.0
1-7	73.5
1-8	84.0
1-9	94.5
1-10	105.0
1-11	115.5
1-12	126.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

III. Monitoring and/or Record Keeping Requirements

1. 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 mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates, in mm cu. ft; and

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates, in mm cu. ft.

2. The permittee shall maintain a log for the interlock system that identifies each time period when the furnace temperature fell below 1000 degrees Fahrenheit, and the emissions unit was not shut down within 30 minutes thereafter.

3. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for emissions units P419, P420, P421 and P422, combined;

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for emissions units P419, P420, P421 and P422, combined; and

c. all periods of time when the furnace temperature fell below 1000 degrees Fahrenheit, and the emissions unit was not shut down within 30 minutes thereafter.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 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: 6.3 tons NOx per rolling, 12-month period, for emissions units P419, P420, P421 and P422, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 100 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.b Emission Limitations: 0.6 lb NOx/hr, 100 lbs NOx/mm cu. ft, 2.63 tons NOx/yr

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.c Emission Limitations: 0.5 lb CO/hr, 2.19 tons CO/yr

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.d Emission Limitations: 0.13 lb VOC/hr, 0.57 ton VOC/yr

Applicable Compliance Method: If required, compliance with the hourly VOC emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

Compliance with the annual VOC emission limitation shall be assumed as long as compliance with the hourly VOC emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.e Emission Limitations: 1.08 lbs PE/hr, 4.73 tons PE/yr

Applicable Compliance Method: If required, compliance with the hourly PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

Compliance with the annual PE limitation shall be assumed as long as compliance with the hourly PE limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.f 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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 reclaim furnace - cell #1	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	6.3 tons nitrogen oxides (NOx)/rolling, 12-month period (from the combustion of natural gas) See A.I.2.b. and A.I.2.d below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-23-06(B), 3745-21-08(B) and 3745-17-07(A). 0.6 lb 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) 1.08 lbs particulate emissions (PE)/hr, 4.73 tons PE/yr (process emissions) See A.II.1 and A.II.3 below.
	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 6-minute average, except as provided by the rule.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. a furnace equipped with low NOx burners and designed to emit NOx at a rate of not more than 100 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions for emissions units P419, P420, P421, and P422, combined, shall not exceed 6.3 tons/rolling, 12-month period.

2.c The 0.13 lb VOC/hr and 1.08 lbs PE/hr emission limitations were established for PTI purposes to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.d The PE limitations are inclusive of and assumed to be PM10.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.f The rolling, 12-month NOx emission limitations specified in section A.I.2.b above were calculated based on the natural gas usage restriction rate (for emissions unitsP419, P420, P421, and P422, combined) specified in section A.II.3 of this permit.

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 a "interlock system" that will shut down the emissions unit when the furnace temperature falls below 1000 degrees Fahrenheit.

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.

II. Operational Restrictions (continued)

3. The maximum annual natural gas usage for emissions units P419, P420, P421, and P422, combined, shall not exceed 126 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	10.5
1-2	21.0
1-3	31.5
1-4	42.0
1-5	52.5
1-6	63.0
1-7	73.5
1-8	84.0
1-9	94.5
1-10	105.0
1-11	115.5
1-12	126.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

III. Monitoring and/or Record Keeping Requirements

1. 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 mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates, in mm cu. ft; and

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates, in mm cu. ft.

2. The permittee shall maintain a log for the interlock system that identifies each time period when the furnace temperature fell below 1000 degrees Fahrenheit, and the emissions unit was not shut down within 30 minutes thereafter.

3. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for emissions units P419, P420, P421 and P422, combined;

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for emissions units P419, P420, P421 and P422, combined; and

c. all periods of time when the furnace temperature fell below 1000 degrees Fahrenheit, and the emissions unit was not shut down within 30 minutes thereafter.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 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: 6.3 tons NOx per rolling, 12-month period, for emissions units P419, P420, P421 and P422, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 100 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.b Emission Limitations: 0.6 lb NOx/hr, 100 lbs NOx/mm cu. ft, 2.63 tons NOx/yr

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.c Emission Limitations: 0.5 lb CO/hr, 2.19 tons CO/yr

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.d Emission Limitations: 0.13 lb VOC/hr, 0.57 ton VOC/yr

Applicable Compliance Method: If required, compliance with the hourly VOC emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

Compliance with the annual VOC emission limitation shall be assumed as long as compliance with the hourly VOC emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.e Emission Limitations: 1.08 lbs PE/hr, 4.73 tons PE/yr

Applicable Compliance Method: If required, compliance with the hourly PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

Compliance with the annual PE limitation shall be assumed as long as compliance with the hourly PE limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.f 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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 reclaim furnace - cell #2	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	6.3 tons nitrogen oxides (NOx)/rolling, 12-month period (from the combustion of natural gas) See A.I.2.b. and A.I.2.d below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-23-06(B), 3745-21-08(B) and 3745-17-07(A). 0.6 lb 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) 1.08 lbs particulate emissions (PE)/hr, 4.73 tons PE/yr (process emissions) See A.II.1 and A.II.3 below.
	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 6-minute average, except as provided by the rule.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. a furnace equipped with low NOx burners and designed to emit NOx at a rate of not more than 100 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions for emissions units P419, P420, P421, and P422, combined, shall not exceed 6.3 tons/rolling, 12-month period.

2.c The 0.13 lb VOC/hr and 1.08 lbs PE/hr emission limitations were established for PTI purposes to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.d The PE limitations are inclusive of and assumed to be PM10.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.f The rolling, 12-month NOx emission limitations specified in section A.I.2.b above were calculated based on the natural gas usage restriction rate (for emissions unitsP419, P420, P421, and P422, combined) specified in section A.II.3 of this permit.

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 a "interlock system" that will shut down the emissions unit when the furnace temperature falls below 1000 degrees Fahrenheit.

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.

II. Operational Restrictions (continued)

3. The maximum annual natural gas usage for emissions units P419, P420, P421, and P422, combined, shall not exceed 126 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	10.5
1-2	21.0
1-3	31.5
1-4	42.0
1-5	52.5
1-6	63.0
1-7	73.5
1-8	84.0
1-9	94.5
1-10	105.0
1-11	115.5
1-12	126.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

III. Monitoring and/or Record Keeping Requirements

1. 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 mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates, in mm cu. ft; and

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates, in mm cu. ft.

2. The permittee shall maintain a log for the interlock system that identifies each time period when the furnace temperature fell below 1000 degrees Fahrenheit, and the emissions unit was not shut down within 30 minutes thereafter.

3. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for emissions units P419, P420, P421 and P422, combined;

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for emissions units P419, P420, P421 and P422, combined; and

c. all periods of time when the furnace temperature fell below 1000 degrees Fahrenheit, and the emissions unit was not shut down within 30 minutes thereafter.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 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: 6.3 tons NOx per rolling, 12-month period, for emissions units P419, P420, P421 and P422, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 100 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.b Emission Limitations: 0.6 lb NOx/hr, 100 lbs NOx/mm cu. ft, 2.63 tons NOx/yr

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.c Emission Limitations: 0.5 lb CO/hr, 2.19 tons CO/yr

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.d Emission Limitations: 0.13 lb VOC/hr, 0.57 ton VOC/yr

Applicable Compliance Method: If required, compliance with the hourly VOC emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

Compliance with the annual VOC emission limitation shall be assumed as long as compliance with the hourly VOC emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.e Emission Limitations: 1.08 lbs PE/hr, 4.73 tons PE/yr

Applicable Compliance Method: If required, compliance with the hourly PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

Compliance with the annual PE limitation shall be assumed as long as compliance with the hourly PE limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.f 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months prior to permit renewal.

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)

3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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 reclaim furnace - cell #3	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	6.3 tons nitrogen oxides (NOx)/rolling, 12-month period (from the combustion of natural gas) See A.I.2.b. and A.I.2.d below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-23-06(B), 3745-21-08(B) and 3745-17-07(A). 0.6 lb 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) 1.08 lbs particulate emissions (PE)/hr, 4.73 tons PE/yr (process emissions) See A.II.1 and A.II.3 below.
	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 6-minute average, except as provided by the rule.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. a furnace equipped with low NOx burners and designed to emit NOx at a rate of not more than 100 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions for emissions units P419, P420, P421, and P422, combined, shall not exceed 6.3 tons/rolling, 12-month period.

2.c The 0.13 lb VOC/hr and 1.08 lbs PE/hr emission limitations were established for PTI purposes to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.d The PE limitations are inclusive of and assumed to be PM10.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.f The rolling, 12-month NOx emission limitations specified in section A.I.2.b above were calculated based on the natural gas usage restriction rate (for emissions unitsP419, P420, P421, and P422, combined) specified in section A.II.3 of this permit.

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 a "interlock system" that will shut down the emissions unit when the furnace temperature falls below 1000 degrees Fahrenheit.

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.

II. Operational Restrictions (continued)

3. The maximum annual natural gas usage for emissions units P419, P420, P421, and P422, combined, shall not exceed 126 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	10.5
1-2	21.0
1-3	31.5
1-4	42.0
1-5	52.5
1-6	63.0
1-7	73.5
1-8	84.0
1-9	94.5
1-10	105.0
1-11	115.5
1-12	126.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 7/1/04, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

III. Monitoring and/or Record Keeping Requirements

1. 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 mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates, in mm cu. ft; and

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates, in mm cu. ft.

2. The permittee shall maintain a log for the interlock system that identifies each time period when the furnace temperature fell below 1000 degrees Fahrenheit, and the emissions unit was not shut down within 30 minutes thereafter.

3. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for emissions units P419, P420, P421 and P422, combined;

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for emissions units P419, P420, P421 and P422, combined; and

c. all periods of time when the furnace temperature fell below 1000 degrees Fahrenheit, and the emissions unit was not shut down within 30 minutes thereafter.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 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: 6.3 tons NOx per rolling, 12-month period, for emissions units P419, P420, P421 and P422, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 100 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.b Emission Limitations: 0.6 lb NOx/hr, 100 lbs NOx/mm cu. ft, 2.63 tons NOx/yr

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.c Emission Limitations: 0.5 lb CO/hr, 2.19 tons CO/yr

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.d Emission Limitations: 0.13 lb VOC/hr, 0.57 ton VOC/yr

Applicable Compliance Method: If required, compliance with the hourly VOC emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

Compliance with the annual VOC emission limitation shall be assumed as long as compliance with the hourly VOC emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.e Emission Limitations: 1.08 lbs PE/hr, 4.73 tons PE/yr

Applicable Compliance Method: If required, compliance with the hourly PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

Compliance with the annual PE limitation shall be assumed as long as compliance with the hourly PE limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.f 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months prior to permit renewal.

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)

3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 7/1/04. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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 reclaim furnace - cell #4	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	9.18 tons nitrogen oxides (NOx)/rolling, 12-month period (from the combustion of natural gas) See A.I.2.b. and A.I.2.f below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-17-07(A), 3745-23-06(B) and 3745-21-08(B). 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 (from holding, fluxing, & drossing) 2.5 lbs hydrogen fluoride (HF)/day, 0.5 ton HF/yr See A.II.1 below.
	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 6-minute average, except as provided by the rule.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. a furnace equipped with low NOx burners and designed to emit NOx at a rate of not more than 85 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions for emissions units P423, P424, P426, and P427, combined, shall not exceed 9.18 tons/rolling, 12-month period.

2.c The 0.82 lb NOx/hr, 0.81 lb CO/hr, 24.45 lbs PE/day and 2.5 lbs HF/hr emission limitations were established for PTI purposes to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.d The PE limitations are inclusive of and assumed to be PM10.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.f The rolling, 12-month NOx emission limitations specified in section A.I.2.b above was calculated based on the natural gas usage restriction rate (for emissions units P423, P424, P426, and P427, combined) specified in section A.II.1 of this permit.

II. Operational Restrictions

1. The maximum annual natural gas usage rate, for emissions units P423, P424, P426, and P427, combined, shall not exceed 216 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	18 .0
1-2	36.0
1-3	54.0
1-4	72.0
1-5	90.0
1-6	108.0
1-7	126.0
1-8	144.0
1-9	162.0
1-10	180.0
1-11	198.0
1-12	216.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 01/06/2004, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

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, combined:

a. the quantity of natural gas combusted, in mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates, in mm cu. ft; and

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates, in mm cu. ft.

2. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
b. the color of the emissions;
c. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for emissions units P423, P424, P426, and P427, combined; and

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for emissions units P423, P424, P426, and P427, combined.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 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: 9.18 tons NOx per rolling, 12-month period, for emissions units P423, P424, P426, and P427, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 85 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.b Emission Limitations: 0.82 lb NOx/hr, 85 lbs NOx/mm cu. ft, 3.59 tons NOx/yr

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.c Emission Limitations: 0.81 lb CO/hr, 3.55 tons CO/yr

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.d Emission Limitations: 2.5 lbs HF/day, 0.5 ton HF/yr

Applicable Compliance Method: If required, compliance with the daily HF emission limitation shall be determined through emission testing conducted in accordance with the appropriate USEPA-approved Methods. The tested hourly result shall then be multiplied by the maximum daily number of hours of operation.

Compliance with the annual HF emission limitation shall be assumed as long as compliance with the daily HF emission limitation is maintained (the annual emission limitation was developed by multiplying the daily emission limitation by the maximum operating schedule of 365 days/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.e Emission Limitations: 24.45 lbs PE/day, 4.46tons PE/yr

Applicable Compliance Method:

The daily PE limitation was established as follows:

i. holding: multiply a maximum of 0.875 lb PE/hr by a maximum of 22 hrs/day) [19.25 lbs PE/day];

ii. fluxing: multiply a maximum of 1.545 lbs PE/hr by a maximum of 1 hr/day) [1.545 lbs PE/day];

iii. drossing: multiply a maximum of 3.655 lbs PE/hr by a maximum of 1 hr/day) [3.655 lbs PE/day]; and

iv. sum i + ii +iii.

If required, compliance with the daily allowable PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A. The tested hourly result shall then be multiplied by the maximum daily number of hours of operation.

Compliance with the annual PE limitation shall be assumed as long as compliance with the daily PE limitation is maintained (the annual emission limitation was developed by multiplying the daily emission limitation by the maximum operating schedule of 365 days/yr, and then dividing by 2000 lbs/ton).

1.f 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 01/06/2004. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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
receiving furnace #1 (R1-2)	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 #1 (R2-3)	40 CFR Part 52.21 OAC rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	9.18 tons nitrogen oxides (NOx)/rolling, 12-month period (from the combustion of natural gas) See A.I.2.b. and A.I.2.f below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-17-07(A), 3745-23-06(B) and 3745-21-08(B). 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 (from holding, fluxing, & drossing) 2.5 lbs hydrogen fluoride (HF)/day, 0.5 ton HF/yr See A.II.1 below.
	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 6-minute average, except as provided by the rule.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. a furnace equipped with low NOx burners and designed to emit NOx at a rate of not more than 85 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions for emissions units P423, P424, P426, and P427, combined, shall not exceed 9.18 tons/rolling, 12-month period.

2.c The 0.82 lb NOx/hr, 0.81 lb CO/hr, 24.45 lbs PE/day and 2.5 lbs HF/hr emission limitations were established for PTI purposes to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.d The PE limitations are inclusive of and assumed to be PM10.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.f The rolling, 12-month NOx emission limitations specified in section A.I.2.b above was calculated based on the natural gas usage restriction rate (for emissions units P423, P424, P426, and P427, combined) specified in section A.II.1 of this permit.

II. Operational Restrictions

1. The maximum annual natural gas usage rate, for emissions units P423, P424, P426, and P427, combined, shall not exceed 216 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	18 .0
1-2	36.0
1-3	54.0
1-4	72.0
1-5	90.0
1-6	108.0
1-7	126.0
1-8	144.0
1-9	162.0
1-10	180.0
1-11	198.0
1-12	216.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 01/06/2004, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

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, combined:

a. the quantity of natural gas combusted, in mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates, in mm cu. ft; and

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates, in mm cu. ft.

2. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
b. the color of the emissions;
c. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for emissions units P423, P424, P426, and P427, combined; and

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for emissions units P423, P424, P426, and P427, combined.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 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: 9.18 tons NOx per rolling, 12-month period, for emissions units P423, P424, P426, and P427, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 85 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.b Emission Limitations: 0.82 lb NOx/hr, 85 lbs NOx/mm cu. ft, 3.59 tons NOx/yr

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.c Emission Limitations: 0.81 lb CO/hr, 3.55 tons CO/yr

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.d Emission Limitations: 2.5 lbs HF/day, 0.5 ton HF/yr

Applicable Compliance Method: If required, compliance with the daily HF emission limitation shall be determined through emission testing conducted in accordance with the appropriate USEPA-approved Methods. The tested hourly result shall then be multiplied by the maximum daily number of hours of operation.

Compliance with the annual HF emission limitation shall be assumed as long as compliance with the daily HF emission limitation is maintained (the annual emission limitation was developed by multiplying the daily emission limitation by the maximum operating schedule of 365 days/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.e Emission Limitations: 24.45 lbs PE/day, 4.46tons PE/yr

Applicable Compliance Method:

The daily PE limitation was established as follows:

i. holding: multiply a maximum of 0.875 lb PE/hr by a maximum of 22 hrs/day) [19.25 lbs PE/day];

ii. fluxing: multiply a maximum of 1.545 lbs PE/hr by a maximum of 1 hr/day) [1.545 lbs PE/day];

iii. drossing: multiply a maximum of 3.655 lbs PE/hr by a maximum of 1 hr/day) [3.655 lbs PE/day]; and

iv. sum i + ii +iii.

If required, compliance with the daily allowable PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A. The tested hourly result shall then be multiplied by the maximum daily number of hours of operation.

Compliance with the annual PE limitation shall be assumed as long as compliance with the daily PE limitation is maintained (the annual emission limitation was developed by multiplying the daily emission limitation by the maximum operating schedule of 365 days/yr, and then dividing by 2000 lbs/ton).

1.f 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO, and for PE by confirming the company-supplied emission rates for holding (0.875 lb PE/hr-holding), fluxing (1.545 lbs PE/hr-fluxing), and drossing (3.655 lbs PE/hr-drossing):

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.

V. Testing Requirements (continued)

3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 01/06/2004. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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
receiving furnace #1 (R2-3)	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	9.18 tons nitrogen oxides (NOx)/rolling, 12-month period (from the combustion of natural gas) See A.I.2.b. and A.I.2.f below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-17-07(A), 3745-23-06(B) and 3745-21-08(B). 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 (from holding, fluxing, & drossing) 2.5 lbs hydrogen fluoride (HF)/day, 0.5 ton HF/yr See A.II.1 below.
	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 6-minute average, except as provided by the rule.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. a furnace equipped with low NOx burners and designed to emit NOx at a rate of not more than 85 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions for emissions units P423, P424, P426, and P427, combined, shall not exceed 9.18 tons/rolling, 12-month period.

2.c The 0.82 lb NOx/hr, 0.81 lb CO/hr, 24.45 lbs PE/day and 2.5 lbs HF/hr emission limitations were established for PTI purposes to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.d The PE limitations are inclusive of and assumed to be PM10.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.f The rolling, 12-month NOx emission limitations specified in section A.I.2.b above was calculated based on the natural gas usage restriction rate (for emissions units P423, P424, P426, and P427, combined) specified in section A.II.1 of this permit.

II. Operational Restrictions

1. The maximum annual natural gas usage rate, for emissions units P423, P424, P426, and P427, combined, shall not exceed 216 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	18 .0
1-2	36.0
1-3	54.0
1-4	72.0
1-5	90.0
1-6	108.0
1-7	126.0
1-8	144.0
1-9	162.0
1-10	180.0
1-11	198.0
1-12	216.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 01/06/2004, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

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, combined:

a. the quantity of natural gas combusted, in mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates, in mm cu. ft; and

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates, in mm cu. ft.

2. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
b. the color of the emissions;
c. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for emissions units P423, P424, P426, and P427, combined; and

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for emissions units P423, P424, P426, and P427, combined.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 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: 9.18 tons NOx per rolling, 12-month period, for emissions units P423, P424, P426, and P427, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 85 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.b Emission Limitations: 0.82 lb NOx/hr, 85 lbs NOx/mm cu. ft, 3.59 tons NOx/yr

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.c Emission Limitations: 0.81 lb CO/hr, 3.55 tons CO/yr

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.d Emission Limitations: 2.5 lbs HF/day, 0.5 ton HF/yr

Applicable Compliance Method: If required, compliance with the daily HF emission limitation shall be determined through emission testing conducted in accordance with the appropriate USEPA-approved Methods. The tested hourly result shall then be multiplied by the maximum daily number of hours of operation.

Compliance with the annual HF emission limitation shall be assumed as long as compliance with the daily HF emission limitation is maintained (the annual emission limitation was developed by multiplying the daily emission limitation by the maximum operating schedule of 365 days/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.e Emission Limitations: 24.45 lbs PE/day, 4.46tons PE/yr

Applicable Compliance Method:

The daily PE limitation was established as follows:

i. holding: multiply a maximum of 0.875 lb PE/hr by a maximum of 22 hrs/day) [19.25 lbs PE/day];

ii. fluxing: multiply a maximum of 1.545 lbs PE/hr by a maximum of 1 hr/day) [1.545 lbs PE/day];

iii. drossing: multiply a maximum of 3.655 lbs PE/hr by a maximum of 1 hr/day) [3.655 lbs PE/day]; and

iv. sum i + ii +iii.

If required, compliance with the daily allowable PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A. The tested hourly result shall then be multiplied by the maximum daily number of hours of operation.

Compliance with the annual PE limitation shall be assumed as long as compliance with the daily PE limitation is maintained (the annual emission limitation was developed by multiplying the daily emission limitation by the maximum operating schedule of 365 days/yr, and then dividing by 2000 lbs/ton).

1.f 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 01/06/2004. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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
holding furnace #1 (H1-2)	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 (R2-3)	40 CFR Part 52.21 OAC rules 3745-31-10 through 3745-31-20	See A.I.2.a below.
	OAC rule 3745-31-05(C) (PTI #03-13364 issued 7/1/04)	9.18 tons nitrogen oxides (NOx)/rolling, 12-month period (from the combustion of natural gas) See A.I.2.b. and A.I.2.f below.
	OAC rule 3745-31-05(A)(3) (PTI #03-13364 issued 7/1/04)	The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rules 3745-31-10 through 3745-31-20, 3745-17-07(A), 3745-23-06(B) and 3745-21-08(B). 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 (from holding, fluxing, & drossing) 2.5 lbs hydrogen fluoride (HF)/day, 0.5 ton HF/yr See A.II.1 below.
	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 6-minute average, except as provided by the rule.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.e below.

2. Additional Terms and Conditions

2.a The permittee shall employ best available control technology (BACT) for this emissions unit. BACT has been determined to be the use of a control system meeting the following requirements for the control of NOx emissions:

i. a furnace equipped with low NOx burners and designed to emit NOx at a rate of not more than 85 lbs/mm cu. ft of natural gas burned.

2.b In order to comply with the Prevention of Significant Deterioration (PSD) and Significant Impact Increment requirements for NOx, the annual NOx emissions for emissions units P423, P424, P426, and P427, combined, shall not exceed 9.18 tons/rolling, 12-month period.

2.c The 0.82 lb NOx/hr, 0.81 lb CO/hr, 24.45 lbs PE/day and 2.5 lbs HF/hr emission limitations were established for PTI purposes to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.d The PE limitations are inclusive of and assumed to be PM10.

2.e The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-13364, issued 7/1/04.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.f The rolling, 12-month NOx emission limitations specified in section A.I.2.b above was calculated based on the natural gas usage restriction rate (for emissions units P423, P424, P426, and P427, combined) specified in section A.II.1 of this permit.

II. Operational Restrictions

1. The maximum annual natural gas usage rate, for emissions units P423, P424, P426, and P427, combined, shall not exceed 216 mm cu. ft/rolling, 12-month period based upon the summation of the monthly natural gas usage rates.

To ensure enforceability during the first 12 calendar months of operation under the provisions of PTI# 03-13364 issued 7/1/04, the permittee shall not exceed the natural gas usage levels specified in the following table:

Month(s)	Maximum Cumulative natural gas usage (mm cu. ft)
1	18 .0
1-2	36.0
1-3	54.0
1-4	72.0
1-5	90.0
1-6	108.0
1-7	126.0
1-8	144.0
1-9	162.0
1-10	180.0
1-11	198.0
1-12	216.0

After the first 12 calendar months of operation under the provisions of PTI# 03-13664 issued 01/06/2004, compliance with the annual natural gas usage shall be based upon a rolling, 12-month summation of the monthly natural gas usage rates

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, combined:

a. the quantity of natural gas combusted, in mm cu. ft;

b. for the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the cumulative monthly natural gas usage rates, in mm cu. ft; and

c. after the first 12 months of operation under the provisions of PTI# 03-13364, issued 7/1/04, the rolling, 12-month natural gas usage rates, in mm cu. ft.

2. The permittee shall perform weekly* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
b. the color of the emissions;
c. the total duration of any visible emission incident; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. for the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances of the allowable monthly cumulative natural gas usage rates, for emissions units P423, P424, P426, and P427, combined; and

b. after the first 12 calendar months of operation under the provisions of PTI# 03-13364, issued 7/1/04, all exceedances the rolling, 12-month natural gas usage rates for emissions units P423, P424, P426, and P427, combined.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 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: 9.18 tons NOx per rolling, 12-month period, for emissions units P423, P424, P426, and P427, combined

Applicable Compliance Method: Compliance with the rolling, 12-month NOx emission limitation above shall be demonstrated by multiplying the rolling, 12-month natural gas usage rate (the value from section A.III.1.c) by the BACT emission limitation of 85 lbs NOx/mm cu. ft, and then dividing by 2000 lbs/ton.

1.b Emission Limitations: 0.82 lb NOx/hr, 85 lbs NOx/mm cu. ft, 3.59 tons NOx/yr

Applicable Compliance Method: If required, compliance with the hourly NOx emission limitation and the lbs NOx/mm cu. ft emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

Compliance with the annual NOx emission limitation shall be assumed as long as compliance with the hourly NOx emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.c Emission Limitations: 0.81 lb CO/hr, 3.55 tons CO/yr

Applicable Compliance Method: If required, compliance with the hourly CO emission limitation shall be determined through emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

Compliance with the annual CO emission limitation shall be assumed as long as compliance with the hourly CO emission limitation is maintained (the annual emission limitation was developed by multiplying the hourly emission limitation by the maximum operating schedule of 8760 hours/yr, and then dividing by 2000 lbs/ton).

1.d Emission Limitations: 2.5 lbs HF/day, 0.5 ton HF/yr

Applicable Compliance Method: If required, compliance with the daily HF emission limitation shall be determined through emission testing conducted in accordance with the appropriate USEPA-approved Methods. The tested hourly result shall then be multiplied by the maximum daily number of hours of operation.

Compliance with the annual HF emission limitation shall be assumed as long as compliance with the daily HF emission limitation is maintained (the annual emission limitation was developed by multiplying the daily emission limitation by the maximum operating schedule of 365 days/yr, and then dividing by 2000 lbs/ton).

V. Testing Requirements (continued)

1.e Emission Limitations: 24.45 lbs PE/day, 4.46tons PE/yr

Applicable Compliance Method:

The daily PE limitation was established as follows:

i. holding: multiply a maximum of 0.875 lb PE/hr by a maximum of 22 hrs/day) [19.25 lbs PE/day];

ii. fluxing: multiply a maximum of 1.545 lbs PE/hr by a maximum of 1 hr/day) [1.545 lbs PE/day];

iii. drossing: multiply a maximum of 3.655 lbs PE/hr by a maximum of 1 hr/day) [3.655 lbs PE/day]; and

iv. sum i + ii +iii.

If required, compliance with the daily allowable PE limitation shall be determined through emission testing conducted in accordance with Methods 1-5 of 40 CFR, Part 60, Appendix A. The tested hourly result shall then be multiplied by the maximum daily number of hours of operation.

Compliance with the annual PE limitation shall be assumed as long as compliance with the daily PE limitation is maintained (the annual emission limitation was developed by multiplying the daily emission limitation by the maximum operating schedule of 365 days/yr, and then dividing by 2000 lbs/ton).

1.f 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 particulate emission limitation above pursuant to OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emissions testing in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NOx, CO, and for PE by confirming the company-supplied emission rates for holding (0.875 lb PE/hr-holding), fluxing (1.545 lbs PE/hr-fluxing), and drossing (3.655 lbs PE/hr-drossing):

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.

V. Testing Requirements (continued)

3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Northwest District Office. 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 Northwest District Office's refusal to accept the results of the emission test(s).

Personnel from the Northwest District Office 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 Northwest District Office 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 Northwest District Office. The permittee shall include in the report the operating parameters as required in (V)(1)(c) above.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in PTI #03-13364 issued on 01/06/2004. The monitoring and record keeping, reporting and testing requirements contained in the above referenced PTI are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the PTI.

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
holding furnace #2 (R2-3)	none	none

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for the emissions units affected by this permit (see emissions units listed below) action were evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

III. Monitoring and/or Record Keeping Requirements (continued)

Pollutant: hexane
TLV (mg/m3): 176
Maximum Hourly Emission Rate (lbs/hr): 0.083
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 60*
MAGLC (ug/m3): 4,190

Pollutant: pentane
TLV (mg/m3): 1770
Maximum Hourly Emission Rate (lbs/hr): 2.94
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 668*
MAGLC (ug/m3): 42,143

Pollutant: styrene
TLV (mg/m3): 85
Maximum Hourly Emission Rate (lbs/hr): 0.21
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 65**
MAGLC (ug/m3): 2,024

Pollutant: butane
TLV (mg/m3): 1901.6
Maximum Hourly Emission Rate (lbs/hr): 1.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 70*
MAGLC (ug/m3): 45,276

Pollutant: hydrogen fluoride
TLV (mg/m3): 1.8
Maximum Hourly Emission Rate (lbs/hr): 10.0
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 59.9***
MAGLC (ug/m3): 180

Pollutant: hydrogen chloride
TLV (mg/m3): 5.5
Maximum Hourly Emission Rate (lbs/hr): 17.76
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):89.5***
MAGLC (ug/m3): 550

Pollutant: chlorine
TLV (mg/m3): 1.45
Maximum Hourly Emission Rate (lbs/hr): 17.28
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):87.0***
MAGLC (ug/m3): 145

*The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: B001, B002, B003, P411, P412, P413, P414, P419, P420, P421, P422, P423, P424, P426, P429 and the following exempt units: one Pre-heater and one HVAC unit.

**The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P411, P412, P413, P414, P419, P420, P421, and P422.

***The Predicted 1-Hour Maximum Ground-Level Concentration is a cumulative summation of the predicted 1-hour maximum ground-level concentrations from all applicable emissions units of this permit action, which include the following emissions units: P423, P424, P426 and P427.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be still satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

3. The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

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 # 119 (loramendi cell no. 8) and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 120 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 2.75 lbs OC/hr, 2.54 tons OC/year (see A.I.2.c) 0.58 lb PE/hr, 0.52 ton PE/yr (see A.I.2.c) Visible PE from the stack(s) serving 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 visible PE established by this rule is less stringent than the visible PE 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 2.75 lbs OC/hr, 2.54 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.58 lb PE/hr, 0.52 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving this emissions unit shall not exceed 10% 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 121 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 2.75 lbs OC/hr, 2.54 tons OC/year (see A.I.2.c) 0.58 lb PE/hr, 0.52 ton PE/yr (see A.I.2.c) Visible PE from the stack(s) serving 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 visible PE established by this rule is less stringent than the visible PE 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 2.75 lbs OC/hr, 2.54 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.58 lb PE/hr, 0.52 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving this emissions unit shall not exceed 10% 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 122 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 1.84 lbs OC/hr, 1.69 tons OC/year (see A.I.2.c) 0.38 lb PE/hr, 0.35 ton PE/yr (see A.I.2.c) Visible PE from the stack(s) serving 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 visible PE established by this rule is less stringent than the visible PE 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 1.84 lbs OC/hr, 1.69 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand .

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.38 lb PE/hr, 0.35 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand and 0.000153 lb OC/lb sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving this emissions unit shall not exceed 10% 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 123 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	44 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 17.94 lbs OC/hr, 15.43 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 2.11 lbs PE/hr, 1.34 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation:44 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 124 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	44 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 17.94 lbs OC/hr, 15.43 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 2.11 lbs PE/hr, 1.34 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation:44 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 10 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	44 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 17.94 lbs OC/hr, 15.43 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 2.11 lbs PE/hr, 1.34 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation:44 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 34/35 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	61.2 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 61.2 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 36/37 (two station machine), core sand mixer and associated conveyor	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B) and 3745-23-06(B). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(2) OAC rule 3745-21-07(G)(1)	None (see A.I.2.e).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	61.2 lbs SO2/hr (See A.I.2.g.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

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 employed 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 OC emission limitations established by this rule.

2.f The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.g The sulfur dioxide emissions generated by the cupola associated with this emissions unit are due solely to the combustion of natural gas, coal and coke. The combustion of natural gas, coal and coke generate minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only materials introduced into this emissions unit, which are used for the process weight rate would be the catalyst, sand, resin and release agent. Using the weight of these materials as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

III. Monitoring and/or Record Keeping Requirements (continued)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions.

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

V. Testing Requirements (continued)

1.d Emission Limitation: 29.73 lbs OC/hr, 25.56 tons OC/year (includes conveyor emissions)

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.005125 lb OC/lb sand (sum of the emission facors of 0.004932 and 0.000193 for the hot box core and conveyor, respectively).

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.001763 ton OC/ton of sand (sum of the emission facors of 0.001347 ton OC/ton of sand and 0.000416 ton OC/ton of sand for the hot box core and hot box conveyor, respectively).

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

1.e Emission Limitation: 3.50 lbs PE/hr, 2.22 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000604 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000153 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 61.2 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 55 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 3.83 lbs OC/hr, 3.52 tons OC/year (see A.I.2.c) 0.80 lb PE/hr, 0.72 ton PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 3.83 lbs OC/hr, 3.52 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand..

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.80 lb PE/hr, 0.72 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 56 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 3.83 lbs OC/hr, 3.52 tons OC/year (see A.I.2.c) 0.80 lb PE/hr, 0.72 ton PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 3.83 lbs OC/hr, 3.52 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand..

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.80 lb PE/hr, 0.72 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 57 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 3.83 lbs OC/hr, 3.52 tons OC/year (see A.I.2.c) 0.80 lb PE/hr, 0.72 ton PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 3.83 lbs OC/hr, 3.52 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand..

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.80 lb PE/hr, 0.72 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 58 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 3.83 lbs OC/hr, 3.52 tons OC/year (see A.I.2.c) 0.80 lb PE/hr, 0.72 ton PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 3.83 lbs OC/hr, 3.52 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand..

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.80 lb PE/hr, 0.72 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 59 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 3.83 lbs OC/hr, 3.52 tons OC/year (see A.I.2.c) 0.80 lb PE/hr, 0.72 ton PE/yr (see A.I.2.c)
	OAC rule 3745-17-07(A)	Visible PE from the stack(s) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 3.83 lbs OC/hr, 3.52 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand..

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.80 lb PE/hr, 0.72 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 61 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 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) serving 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

4. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 5.36 lbs OC/hr, 4.93 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.12 lbs PE/hr, 1.01 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 7.38 lbs OC/hr, 6.10 tons OC/year 2.37 lbs PE/hr, 1.63 ton PE/yr 0.82 lb carbon monoxide (CO)/hr, 1.34 tons CO/yr 0.98 lb nitrogen oxides (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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	166 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight determination which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit which is used in the process weight determination would be the sand core. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuels used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.38 lbs OC/hr, 6.10 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.37 lbs PE/hr, 1.63 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 166 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.98 lb NOx/hr, 1.60 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.82 lb CO/hr, 1.34 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 3.69 lbs OC/hr, 3.05 tons OC/year 1.18 lbs PE/hr, 0.82 ton PE/yr 0.49 lb nitrogen oxides (NOx)/hr, 0.80 ton 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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(B)	See A.I.2.d.
	OAC rule 3745-21-07(G)(1)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-18-06(E)	104 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 3.69 lbs OC/hr, 3.05 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 1.18 lbs PE/hr, 0.82 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 104 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.49 lb NOx/hr, 0.80 ton NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 lbs nitrogen oxides (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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	170 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 7.65 lbs OC/hr, 6.32 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.45 lbs PE/hr, 1.69 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 170 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 1.01 lbs NOx/hr, 1.66 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation:0.85 lb CO/hr, 1.39 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-18-06(E), 3745-21-08(B), 3745-21-07(G) and 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, combined. 151.56 tons particulate emissions (PE) per rolling 12-month period, from all the emissions units identified in A.I.2.a, combined. 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 oxides (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 PE limitation established by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B) OAC rule 3745-21-08(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)	none (See A.I.2.g.)
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.
	OAC rule 3745-18-06(E)	150 lbs SO2/hr (See A.I.2.f.)

2. Additional Terms and Conditions

2.a The total PE and OC emission limitations shall apply to the following emissions units, combined: 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 units comprise the Plant 1 core room operations.

2.b Best available technology (BAT) has been determined to be the use of natural gas as fuel in this emissions unit.

2.c For the purposes of federal enforceability, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in permit to install No. 03-14001.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.e The hourly and annual PE, NOx, CO and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

2.f The sulfur dioxide emissions generated by this emissions unit are due solely to the combustion of natural gas. The combustion of natural gas generates minor amounts of sulfur dioxide emissions. The natural gas is specifically exempted from the emissions unit's process weight rate, which is the basis for establishing the sulfur dioxide emission limitation. The only material introduced into this emissions unit, which would be used for the process weight rate would be the sand cores. Using the weight of this material as the process weight rate in the equation specified in OAC rule 3745-18-06(E)(2) yields a very high allowable emission limitation relative to the sulfur dioxide emissions generated from the combustion of the fuel used in this emissions unit. Therefore, compliance with the OAC Chapter 3745-18 requirements will be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

2.g The liquid organic material/substance containing liquid organic material employed in 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.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

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, combined):

1.a the total quantity of sand processed, in tons; and

1.b the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of 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, combined:

2.a the quantity of sand processed in the hot box core machines (i.e., the amount from 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 from 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 = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A of 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

2.d the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U* = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V* = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W* = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5 of 40 CFR, Part 60, Appendix A for PE.

2.e the rolling, 12-month OC emission rate, in tons; and

III. Monitoring and/or Record Keeping Requirements (continued)

2.f the rolling, 12-month PE rate, in tons.

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, excluding water vapor, from the stacks 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 also note the following in the operations log:

a. the date and time of the visible emission observation;
b. the identification of the stack(s) observed;
c. the color of the emissions;
d. the total duration of any visible emission observation; and
e. the corrective actions, if any, taken to eliminate the visible emissions

* once during each normal operating calendar week

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

1.a all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons; and

1.b all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe any corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitations: 6.33 lbs OC/hr, 5.23 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000293 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000148 ton OC/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 2.03 lbs PE/hr, 1.40 tons PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000094 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000396 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving 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)(1).

1.g Emission Limitation: 150 lbs SO2/hr

Applicable Compliance Method: Compliance with the hourly allowable SO2 limitation shall be assumed due to the high allowable emission limitation and the relatively low amount of sulfur dioxide emitted from the process.

If required, the permittee shall demonstrate compliance with the hourly SO2 emission limitation by testing in accordance with Methods 1- 4 and 6 of 40 CFR Part 60, Appendix A.

1.h Emission Limitation: 0.84 lb NOx/hr, 1.37 tons NOx/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly NOx emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft].

The permittee may demonstrate compliance with the annual NOx emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [100 lbs NOx/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly NOx limitation by testing in accordance with Methods 1- 4 and 7 of 40 CFR Part 60, Appendix A.

1.i Emission Limitation: 0.70 lb CO/hr, 1.15 tons CO/yr

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly CO emission limitation above by multiplying the maximum hourly gas burning capacity of the emissions unit (mm cu. ft/hr) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft].

The permittee may demonstrate compliance with the annual CO emission limitation above by multiplying the maximum annual gas burning capacity of the emissions unit (mm cu. ft/year) by the AP-42, Chapter 1.4-1 (revised 7/98) emission factor for natural gas combustion [84 lbs CO/mm cu. ft], and then dividing by 2000.

If required, the permittee shall demonstrate compliance with the hourly CO limitation by testing in accordance with Methods 1- 4 and 10 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 125 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 3.61 lbs OC/hr, 3.33 tons OC/year (see A.I.2.c) 0.76 lb PE/hr, 0.68 ton PE/yr (see A.I.2.c) Visible PE from the stack(s) serving 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 visible PE established by this rule is less stringent than the visible PE 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

III. Monitoring and/or Record Keeping Requirements (continued)

4. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 3.61 lbs OC/hr, 3.33 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand and 0.0000665 lb OC/lb sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.76 lb PE/hr, 0.68 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving this emissions unit shall not exceed 10% 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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 # 126 and core sand mixer	OAC rule 3745-31-05(A)(3) (PTI 03-14001, issued 2/12/04)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-07(G)(9)(h). 1207.90 tons of organic compounds (OC) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 151.56 tons particulate emissions (PE) per rolling 12-month period, for all the emissions units identified in A.I.2.a, combined 3.61 lbs OC/hr, 3.33 tons OC/year (see A.I.2.c) 0.76 lb PE/hr, 0.68 ton PE/yr (see A.I.2.c) Visible PE from the stack(s) serving 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 visible PE established by this rule is less stringent than the visible PE 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).
	40 CFR, Part 63, Subpart EEEEE	See Part II of this permit.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)(9)(h)	The catalyst gas system emissions shall be vented to a sulfuric acid scrubber that is designed and operated to remove 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, combined: 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 units 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, all OC emissions shall be considered to be volatile organic compounds (VOC) emissions.

2.d The hourly and annual PE and OC emission limitations were established for PTI purposes to reflect the emissions unit's potentials to emit. Therefore, it is not necessary to develop monitoring, record keeping and/or reporting requirements to ensure compliance with these emission limitations.

II. Operational Restrictions

1. The annual quantity of sand processed for Plant 1 core room operations (i.e., all the emissions units listed in A.I.2.a, combined) shall not exceed 1,024,555 tons, based upon a rolling, 12-month summation of the monthly rates of sand throughput.

2. The liquor flow rate of the catalyst gas scrubber shall be continuously maintained at a value of not less than 3 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 liquor 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, combined):

a. the total quantity of sand processed, in tons; and

b. the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly rates of sand processed.

III. Monitoring and/or Record Keeping Requirements (continued)

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, combined:

a. the quantity of sand processed in the hot box core machines (i.e., the amount from 1.a used in the hot box core machines), in tons;

b. the quantity of sand processed in the cold box core machines (i.e., the amount from 1.a used in the cold box core machines), in tons;

c. the calculated emission rate for OC, in tons, determined by the following equation:

TOCE = [(the value from 2.a) x (Q + R)] + [(the value from 2.b) x (S)] + [(the value from 1.a) x (T)]

where:

TOCE = total organic compound emissions, in tons

Q* = OC emission factor, 0.001347 ton OC/ton sand processed (for hot box core machine operations)

R* = OC emission factor, 0.000416 ton OC/ton sand processed (for hot box conveyors)

S* = OC emission factor, 0.000313 ton OC/ton sand processed (for cold box core machine operations)

T* = OC emission factor for OC, 0.000148 ton OC/ton sand processed (for core oven operations)

d. the calculated emission rate for PE, in tons, determined by the following equation:

TPE = [(the value from 2.a) x (U)] + [(the value from 2.b) x (V)] + [(the value from 1.a) x (W)]

where:

TPE = total PE, in tons

U** = PE emission factor, 0.000153 ton PE/ton sand processed (for hot box core machine operations)

V** = PE emission factor, 0.0000643 ton PE/ton sand processed (for cold box core machine operations)

W** = PE emission factor, 0.0000396 ton PE/ton sand processed (for core oven operations)

e. the rolling, 12-month OC emission rate, in tons; and

f. the rolling, 12-month PE rate, in tons.

*These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The OC emission factors reflected in permit to install no. 03-14001 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 25A, 40 CFR, Part 60, Appendix A, calibrated to propane, for OC emissions.

**These emission factors were contained in the BAT document submitted and approved in 2002 as part of the permit application. The PE factors reflected in permit to install no. 03-14001 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 Methods 1 - 5, 40 CFR, Part 60, Appendix A for PE.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.

III. Monitoring and/or Record Keeping Requirements (continued)

4. The permittee shall properly operate and maintain equipment to monitor the pH of the catalyst gas scrubber liquor and the scrubber liquor 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 with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information each day for this emissions unit:

a. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

b. all time periods during which the capture system, control device and/or monitoring equipment were not working while the emissions unit was in operation.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, in accordance with the General Terms and Conditions of this permit, that identify the following:

a. all exceedances of the rolling, 12-month sand throughput restriction of 1, 024,555 tons;

b. all exceedances of the rolling, 12-month emission limitations for PE and OC of 151.56 tons and 1207.90 tons, respectively;

c. all instances during which the catalyst gas scrubber liquor flow rate was less than 3 gallons per minute per 1,000 cfm per minute of gas flow; and

d. all periods of time when the pH exceeded 5 and the emissions unit was not shut down within 30 minutes.

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 of this permit.

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 of this permit.

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 of this permit.

1.d Emission Limitation: 3.61 lbs OC/hr, 3.33 tons OC/year

Applicable Compliance Method: The hourly OC emission limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.00085 lb OC/lb sand.

The annual OC emission limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.000313 ton OC/ton of sand and 0.0000665 lb OC/lb sand.

If required, the permittee shall demonstrate compliance with the hourly OC emission limitation by testing in accordance with Methods 1-4, and 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

V. Testing Requirements (continued)

1.e Emission Limitation: 0.76 lb PE/hr, 0.68 ton PE/yr

Applicable Compliance Method: The hourly PE limitation was established by multiplying the maximum hourly sand usage rate (lbs/hr) by an emission factor of 0.000178 lb PE/lb sand.

The annual PE limitation was established by multiplying the maximum annual sand usage rate (tons/yr) by an emission factor of 0.0000643 ton PE/ton of sand.

If required, the permittee shall demonstrate compliance with the hourly PE limitation by testing in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

1.f Emission Limitation: Visible PE from the stack(s) serving this emissions unit shall not exceed 10% 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)(1).

1.g Emission Limitation: 98% control efficiency for the catalyst gas emissions, by weight

Applicable Compliance Method: 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 of 40 CFR, Part 60, Appendix A; 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 other data collected (i.e., process weight rate, etc.) during the testing of the control equipment outlet for this emissions unit (inlet mass emission testing is not possible on this emissions unit).

VI. Miscellaneous Requirements

1. Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the preceding monitoring and record keeping, reporting and testing requirements are as stringent or more stringent than the monitoring and record keeping, reporting and testing requirements contained in Permit to Install #03-14001, issued on 2/12/04. The monitoring and record keeping, reporting and testing requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping, reporting and testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping, reporting and testing requirements in the Permit to Install.

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: LINE 6 BLAST CABINET (P454)

Activity Description: (Plant 2) - Line 6 Shot Blast Cleaning 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
line 6 blast cabinet	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 rule.
	OAC rule 3745-17-11(B)	See A.I.2.d.
	OAC rule 3745-31-05(A)(3) (PTI #0313910, issued 5/4/2004)	2.04 lbs PE/hr, 8.94 tons PE/yr The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).

2. Additional Terms and Conditions

2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

2. Additional Terms and Conditions (continued)

2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

Dust collectors: DC-031 Plt2

2.d The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A).

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

a. for uncontrolled stacks, once weekly* during normal operations ;
b. for wet dust collectors, once weekly* during normal operations; and
c. for dry dust collectors, once weekly* during normal operations.

* once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, shall be noted in an operations log. If visible emissions are observed, the permittee shall also 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. the corrective actions, if any, taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stacks serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) 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:
2.04 lbs PE/hr and .020 gr/dsaf (if applicable)

Applicable Compliance Method:
The permittee may 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 the emissions unit;
Fi= the flow rate from this emissions unit for 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 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit.

If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 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).

1.c Emission Limitation:
8.94 tons PE/year

Applicable Compliance Method:
As long as compliance with the hourly emission limitation is maintained, compliance with the annual emission limitation shall be ensured (the annual limitation was calculated by multiplying the hourly limitation by 8760, and then dividing by 2000).

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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