PERMIT-TO-INSTALL APPLICATION
OHIO RIVER CLEAN FUELS FACILITY
VILLAGE OF WELLSVILLE, COLUMBIANA AND JEFFERSON COUNTIES, OHIO

SUBMITTED TO:

OHIO ENVIRONMENTAL PROTECTION AGENCY

SUBMITTED BY:

OHIO RIVER CLEAN FUELS, LLC
800 NE TENNEY ROAD, SUITE 110, #104
VANCOUVER, WASHINGTON 98685

Ohio River Clean Fuels, LLC

Baard Energy, LLC

PREPARED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 BALDWIN ROAD
PITTSBURGH, PENNSYLVANIA 15205

CEC PROJECT 061-933.0024

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MODULE 10

Civil & Environmental Consultants, Inc.

Pittsburgh 333 Baldwin Road
Pittsburgh, Pennsylvania 15205
Phone 412/429-2324
Fax 412/429-2114
Toll Free 800/365-2324
E-mail info@cecinc.com

Chicago	877/963-6026
Cincinnati	800/759-5614
Cleveland	866/507-2324
Columbus	888/598-6808
Detroit	866/380-2324
Export	800/899-3610
Indianapolis	877/746-0749
Nashville	800/763-2326
St. Louis	866/250-3679

Corporate Web Site http://www.cecinc.com

1.0 PROCESS DESCRIPTION

The waste heat from condensers at the facility will be rejected by two hyperbolic wet cooling towers. Each tower will be 580 feet tall and 239 feet in diameter at the top. Ohio River water will be used for the cooling tower makeup with pre-treatment prior to use. The cooling towers will also provide cooling required for the coal-to-liquids processes. Approximately 961,900 gallons per minute of cooling water will be circulated in the two towers combined. Each tower will be equipped with drift eliminators. Figure 21 is a block flow diagram of this process (see Attachment 10A).

2.0 AIR EMISSIONS INVENTORY

Two hyperbolic (natural draft) cooling towers will be needed at the facility. Particulate matter emissions from cooling towers are a function of circulated water volume, the total dissolved solids (TDS) content of the cooling water, and the rate at which drift is emitted from the tower. Drift is the term for airborne water droplets that escape in the cooling tower discharge. The particulate matter content of drift droplets is classified as an air emission. Particulate matter emissions from cooling towers are assumed to be entirely PM10.

The cooling towers for this project will be equipped with high-efficiency drift eliminators as BACT for particulate matter control. According to the engineering design for the towers, they will achieve a drift rate of 0.0005% for each cooling tower.

Actual PM10 emissions produced by the cooling towers are based on the following equation:

PM10 (lb/hr) = (circulated water (lb/hr)) x (drift fraction) x (TDS fraction)

Based on the combined circulating water rate of about 962,000 gallons per minute (481.67 MMlb/hr), the high efficiency drift rate of 0.0005%, and the TDS content of the cooling water (2,000 mg/L design basis), actual PM10 emissions from each tower are estimated at 2.4 lb/hr and 10.5 tpy.

Cooling tower literature indicates that natural draft cooling tower drift rates typically range from 0.3% to 1.0% without drift eliminators. Potential particulate emissions from drift have therefore been based on an assumed 1% drift rate. Hourly potential PM10 emissions from each tower assuming 962,000 gallons per minute circulating water and 2,000 mg/L TDS content would be about 4,800 lb/hr and annual emissions from each tower, assuming continuous operation, would be about 21,100 tpy.

Details concerning these estimates are provided in the accompanying Supporting Calculations (see Attachment 10B). HAP emissions from the cooling towers will be directly proportional to the concentration of the species in the cooling water. HAP emission estimates are based on measured water quality parameters, as discussed in Attachment 10B.

3.0 SOURCE-SPECIFIC APPLICABLE REGULATIONS

This section presents information concerning applicable state and federal regulations as well as specific exemptions, as appropriate. State regulatory references are to the Ohio Administrative Code (OAC), unless otherwise noted. Source-specific regulations are discussed relative to each permit application module. Facility-wide applicable regulations are addressed in the Application Introduction.

3.1 State Regulations

3.1.1 Control of visible particulate emissions from stationary sources. (3745-17-07)

The cooling towers are sources of particulate matter. Stationary sources are subject to Chapter 3745-17-07(A)(1)(a) which limits visible particulate emissions to less than 20% opacity as a six-minute average. Chapter 3745-17-07(A)(1)(b) further states that the 20% opacity limit may not be exceeded for more than six consecutive minutes in any sixty minutes and never shall the opacity exceed 60% as a 6-minute average.

3.1.2 Restrictions on particulate emissions from industrial processes. (3745-17-11)

Operations, processes, and activities which release or may release particulate emissions into the ambient air, with certain exceptions, are subject to this rule. Allowable particulate emission rates are determined on the basis of process weight at maximum capacity. The process weight for each cooling tower would be the weight of water circulated (about 481,000 gallons per tower per minute (about 241 million pounds per hour or 120,400 tons per hour). According to Chapter 3745-17-11 Table I "Allowable Rate of particulate Emissions Based On Process Weight At Maximum Capacity (P)," the allowable particulate emission rate from each tower is 159 lb/hr.

In accordance with 3745-31-05(A)(3), sources are also required to employ best available technology (BAT). Because all sources and pollutants are address in the BACT analysis, BAT is assumed to have been achieved for affected emission units.

3.134 Permits to Install New Sources (3745-31)

The cooling towers are part of a major stationary source. Because the major stationary source is located within an attainment area for all criteria pollutants, according to 3745-31-12(A), each emissions unit is subject to an evaluation of Best Available Control Technology (BACT). The BACT analysis for these emission units is provided in see Section 4. In accordance with 3745-31-05(A)(3), sources are also required to employ BACT. Because all sources and pollutants are addressed in the BACT analysis, BAT is assumed to have been achieved for affected emissions units.

3.2 Federal Regulations

3.2.1 National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers (40 CFR 63 Subpart Q)

The provisions of 40 CFR 63 Subpart Q apply to all cooling towers that are operated using chromium-based water treatment chemicals and are either major sources or are integral parts of facilities that are major sources as defined in §63.401. The cooling towers to be constructed for Ohio River Clean Fuels will not utilize chromium-based water treatment, therefore this regulation is not applicable.

4.0 BACT ANALYSIS

4.1 Particulate Matter

Two parabolic cooling towers will generate particulate emissions associated with the particulate content of droplets evaporated from the cooling tower.

4.1.1 Available Control Technologies – Particulate Matter

Particulate emissions from wet cooling towers are a function of the suspended solids content of the cooling water and the number and size of droplets produced within the tower. To reduce the drift from cooling towers, drift eliminators are usually incorporated into the tower design to remove as many droplets as practical from the air stream before exiting the tower. A review of the past 10 years of RACT, BACT, LAER Clearinghouse (RBLC) determinations located the following control technologies associated with BACT or other case-by-case determinations:

- Good design and operation practices
- Drift eliminator (various drift rate percentages)
- Drift eliminator with good operating practices
- High efficiency drift eliminator

4.1.2 Technically Infeasible Options – Particulate Matter

Drift eliminators are technically feasible for the cooling towers proposed for this facility.

4.1.3 Technology Ranking – Particulate Matter

Drift eliminators are considered to be the only technically feasible control technologies for the proposed cooling towers. Eliminators varying from 0.001% to 0.0005% drift are used depending on the size and type of cooling tower.

4.1.4 Evaluate Most Effective Controls – Particulate Matter

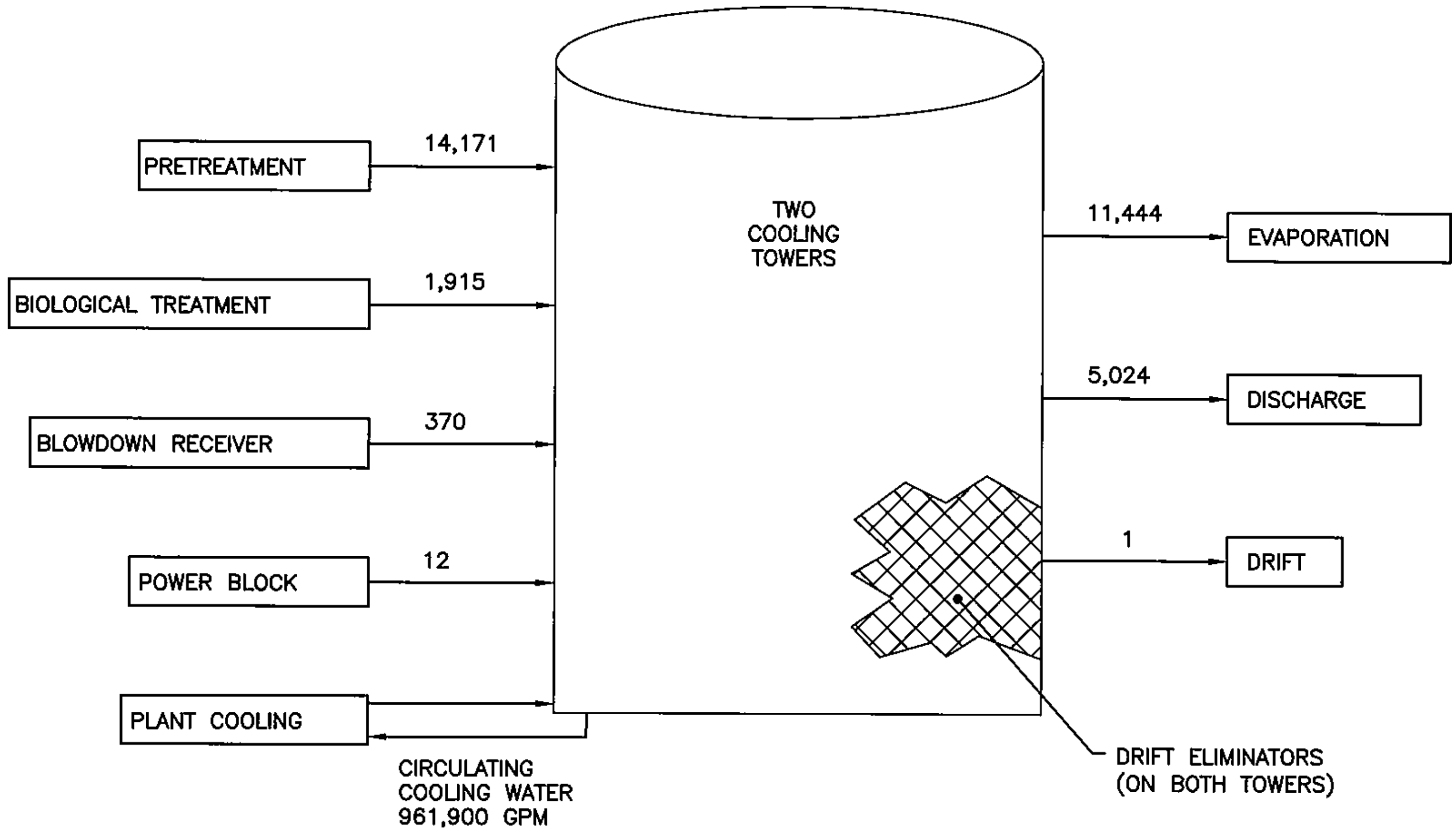
High efficiency drift eliminators achieving 0.0005% drift have been specified for the ORCF cooling towers.

4.1.5 Proposed BACT Limits and Control Options – Particulate Matter

High-efficiency drift eliminators will be incorporated into the design of the two parabolic natural draft cooling towers. Visible particulate matter emissions from each cooling tower stack will not exceed 20% opacity, as a six-minute average, excluding uncombined water (OAC 3745-17-07(A)(1)).

ATTACHMENT 10A
MODULE 10
FIGURES

\\SVR-PITT\CADD\PROJECTS\2006\061-933\DWG\061933-ENV4-10.DWG {FIG 21} (LCOLAIZZI) - DEC 11, 2007 - 16:57:47



NOTE:
1. FLOWS ARE IN GALLONS PER MINUTE

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
A	06/19/07	DRAFT SUBMISSION, AS: 061-933-FIGURE-13-BLOCK-FLOW-DIAGRAM.dwg
A	12/17/07	AIR PERMIT APPLICATION

Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205-9072
412-429-2324 · 800-365-2324
www.cecinc.com

OHIO RIVER CLEAN FUELS, LLC
PROPOSED COAL TO LIQUID FUEL PLANT
COLUMBIANA AND JEFFERSON COUNTY
WELLSVILLE, OHIO

MODULE 10
COOLING TOWERS

APPROVED: [signature]		PROJECT NO: 061-933.0002	FIGURE NO: 21
DRAWN BY: JRW/LKC	CHKD BY: DJL	DWG SCALE: N.T.S.	LAST EDIT DATE: 11/26/07

ATTACHMENT 10B
MODULE 10
SUPPORTING CALCULATIONS

Supporting Calculations

Cooling tower PM10 emission estimates are derived using two different approaches: one for actual emissions and another for potential emissions, as described below.

Assumptions

962,000	gal/min - cooling water circulation rate
2,000	mg/L (ppmw) - total dissolved solids of cooling water (Ohio River)
0.0005	% of circulating water flow drift fraction per vendor for high efficiency drift eliminators
2	cooling towers
	PM10 = PE

Stack Air Flow

32,000	lb/s air flow per cooling tower (per engineering design)
15.27	cf/lb density of air at 108°F and 1,660 feet above sea level.
29,318,400	ACFM per tower

Actual Emissions

Predicted Actual Emissions Calculation (assuming high efficiency drift eliminators)
(Assumes that once water evaporates all remaining particles are PM10)
PM10 (lb/hr) = (cooling water circulation (lbs/hr)) x (drift fraction) x (TDS ppmw)
481,673,400 cooling water circulation (lb/hr)

PM10=	**4.8**	lb/hr (two towers combined)	**2.4**	lb/hr (per tower)
PM10=	**21.1**	tpy (two towers combined)	**10.5**	tpy (per tower)

Potential Emissions Based on Maximum Expected Drift Rate

Conservatively High Potential Emissions assuming 1% drift without drift eliminators
(Assumes that once water evaporates all remaining particles are PM10)
*PM10=DR*TDS*CWCR*

PM10 = particulate emission factor (lbs/hr)
DR = total liquid drift rate (1% of circulating water)
TDS = total dissolved solids (2,000 mg/L)
CWCR = cooling water circulation rate (481,673,400 lb/hr)

PM10=	**9,633**	lb/hr (two towers combined)	**4,817**	lb/hr (per tower)
PM10=	**42,195**	tpy (two towers combined)	**21,097**	tpy (per tower)

Supporting Calculations

HAPs

HAP emission estimates are based on the following measured concentrations of hazardous constituents. Data were obtained from the 2006 Biennial Assessment of Ohio River Water Quality Conditions prepared by the Ohio River Valley Water Sanitation Commission (ORSANCO). Appendix D of that report contains Clean Metals Sampling Data. The New Cumberland station was determined to be the closest station to the project site and the most recent two detected concentrations were averaged to produce the values listed here. Non-detected constituents are not included.
Emissions estimates are based on the following equation:

emission rate (lb/hr) = water circulation rate x concentration (ppmw) x drift %

Water Circulation Rate:	481,673,400	lb/hr (both towers combined)
	240,836,700	lb/hr (single tower)
Drift Rate (%)	0.0005	

Controlled HAP Emission Estimates (Per Tower)				Uncontrolled (No Drift Eliminators)	
Constituent	Conc. (ppmw)	lb/hr	tpy	lb/hr	tpy
Arsenic	0.00035	4.21E-07	1.85E-06	8.43E-04	3.69E-03
Chromium	0.00055	6.62E-07	2.90E-06	1.32E-03	5.80E-03
Mercury	0.000002	2.41E-09	1.05E-08	4.82E-06	2.11E-05
Manganese	**0.085**	**1.02E-04**	**4.48E-04**	2.05E-01	8.97E-01
Nickel	0.0029	3.49E-06	1.53E-05	6.98E-03	3.06E-02
Lead	0.0004	4.82E-07	2.11E-06	9.63E-04	4.22E-03
Selenium	0.00089	1.07E-06	4.69E-06	2.14E-03	9.39E-03
	TOTALS	1.08E-04	4.75E-04	2.17E-01	9.50E-01

ATTACHMENT 10C
MODULE 10
DOCUMENTATION

LIST OF REFERENCES

- U.S. EPA, RACT/BACT/LAER Clearinghouse (RBLC); website: http://cfpub.epa.gov/RBLC

ATTACHMENT 10D
MODULE 10
OEPA APPLICATION FORMS

Section II - Specific Air Contaminant Source Information

NOTE: One copy of this section should be filled out for each air contaminant source covered by this PTI application. See the line by line PTI instructions for additional information.

1. Company identification (name for air contaminant source for which you are applying): COOLING TOWER 1

2. List all equipment that are part of this air contaminant source: COOLING TOWER 1

3. Air Contaminant Source Installation or Modification Schedule (must be completed regardless of date of installation or modification):

   When did/will you begin to install or modify the air contaminant source? (month/year) SECOND QUARTER 2008

   When did/will you begin to operate the air contaminant source? (month/year) THIRD QUARTER 2011 **OR** after issuance of PTI ______________

4. Emissions Information: The following table requests information needed to determine the applicable requirements and the compliance status of this air contaminant source with those requirements. Suggestions for how to estimate emissions may be found in the instructions to the Emissions Activity Category (EAC) forms required with this application. If you need further assistance, contact your Ohio EPA permit representative.

   - If total potential emissions of HAPs or any Air Toxic is greater than 1 ton/yr, fill in the table for that (those) pollutant(s). For all other pollutants, if "Emissions before controls (max), lb/hr" multiplied by 24 hours/day is greater than 10 lb/day, fill in the table for that pollutant.
   - If you have no add-on control equipment, "Emissions before controls= will be the same as "Actual emissions"
   - Annual emissions should be based on operating 8760 hr/yr unless you are requesting operating restrictions to limit emissions in line # 8 or have described inherent limitations below.
   - If you use units other than lb/hr or ton/yr, specify the units used (e.g., gr/dscf, lb/ton charged, lb/MMBtu, ton/12-months).
   - Requested Allowable (ton/yr) is often equivalent to Potential to Emit (PTE) as defined in OAC rule 3745-31-01 and OAC rule 3745-77-01.

Pollutant	Emissions before controls (max) (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year)	Requested Allowable (lb/hr)	Requested Allowable (ton/year)
Particulate emissions (PE) (formerly particulate matter, PM)	4,817	2.4	10.5	2.4	10.5
PM_{10} (PM < 10 microns in diameter)	4,817	2.4	10.5	2.4	10.5
Sulfur dioxide (SO_2)	0	0	0	0	0
Nitrogen oxides (NO_x)	0	0	0	0	0
Carbon monoxide (CO)	0	0	0	0	0
Organic compounds (OC)	0	0	0	0	0
Volatile organic compounds (VOC)	0	0	0	0	0
Total HAPs	0.22	0.00011	0.00048	0.00011	0.00048
Highest single HAP: (Mn)	0.21	0.00011	0.00045	0.00011	0.00045
Air Toxics (see instructions):	0.22	0.00011	0.00048	0.00011	0.00048

Provide your calculations as an attachment and explain how all process variables and emission factors were selected. Note the emissions factor(s) employed and document the origin. Example: AP-42, Table 4.4-3 (8/97); stack test, Method 5, 4/96; mass balance based on MSDS; etc.

5. **Does this air contaminant source employ emissions control equipment?**

☒ **Yes** - fill out the applicable information below.

☐ **No** - proceed to item # 6.

Note: Pollutant abbreviations used below: Particulates = PE; Organic compounds = OC; Sulfur dioxide = SO_2; Nitrogen oxides = NOx; Carbon monoxide = CO

☐ **Cyclone/Multiclone**

Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________
Estimated capture efficiency (%): ________ Basis for efficiency: ____________
Design control efficiency (%): ________ Basis for efficiency: ____________
Type: ☐ Cyclone ☐ Multiclone ☐ Rotoclone ☐ Other ____________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Fabric Filter/Baghouse**

Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________
Estimated capture efficiency (%): ________ Basis for efficiency: ____________
Design control efficiency (%): ________ Basis for efficiency: ____________
Operating pressure drop range (inches of water): Minimum: ________ Maximum: ________
Pressure type: ☐ Negative pressure ☐ Positive pressure
Fabric cleaning mechanism: ☐ Reverse air ☐ Pulse jet ☐ Shaker ☐ Other ____________
☐ Lime injection or fabric coating agent used: Type: ________ Feed rate: ________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Wet Scrubber**

Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________
Estimated capture efficiency (%): ________ Basis for efficiency: ____________
Design control efficiency (%): ________ Basis for efficiency: ____________
Type: ☐ Spray chamber ☐ Packed bed ☐ Impingement ☐ Venturi ☐ Other ____________
Operating pressure drop range (inches of water): Minimum: ________ Maximum: ________
pH range for scrubbing liquid: Minimum: ________ Maximum: ________
Scrubbing liquid flow rate (gal/min): ________
Is scrubber liquid recirculated? ☐ Yes ☐ No
Water supply pressure (psig): ________ NOTE: This item for spray chambers only.
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Electrostatic Precipitator**

Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________

Estimated capture efficiency (%):_________ Basis for efficiency: ____________________
Design control efficiency (%):_________ Basis for efficiency: ____________________
Type: ☐ Plate-wire ☐ Flat-plate ☐ Tubular ☐ Wet ☐ Other ___________
Number of operating fields: ___________

☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Concentrator**

Manufacturer: ______________________ Year installed: ______________________
What do you call this control equipment: ______________________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______________
Estimated capture efficiency (%):_________ Basis for efficiency: ____________________
Design regeneration cycle time (minutes): ___________
Minimum desorption air stream temperature (°F): _________
Rotational rate (revolutions/hour): ___________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Catalytic Incinerator**

Manufacturer: ______________________ Year installed: ______________________
What do you call this control equipment: ______________________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______________
Estimated capture efficiency (%):_________ Basis for efficiency: ____________________
Design control efficiency (%):_________ Basis for efficiency: ____________________
Minimum inlet gas temperature (°F): ___________
Combustion chamber residence time (seconds): ___________
Minimum temperature difference (°F) across catalyst during air contaminant source operation: _______
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Thermal Incinerator/Thermal Oxidizer**

Manufacturer: ______________________ Year installed: ______________________
What do you call this control equipment: ______________________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______________
Estimated capture efficiency (%):_________ Basis for efficiency: ____________________
Design control efficiency (%):_________ Basis for efficiency: ____________________
Minimum operating temperature (°F) and location: ______________________ (See line by line instructions.)
Combustion chamber residence time (seconds): ___________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Flare**

Manufacturer: ______________________ Year installed: ______________________
What do you call this control equipment: ______________________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______________
Estimated capture efficiency (%):_________ Basis for efficiency: ____________________
Design control efficiency (%):_________ Basis for efficiency: ____________________
Type: ☐ Enclosed ☐ Elevated (open)
Ignition device: ☐ Electric arc ☐ Pilot flame
Flame presence sensor: ☐ Yes ☐ No
☐ This is the only control equipment on this air contaminant source

If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment: ______

☐ **Condenser**
Manufacturer: ______ Year installed: ______
What do you call this control equipment: ______
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______
Estimated capture efficiency (%):______ Basis for efficiency: ______
Design control efficiency (%):______ Basis for efficiency: ______

Type: ☐ Indirect contact ☐ Direct contact
Maximum exhaust gas temperature (°F) during air contaminant source operation: ______
Coolant type: ______
Design coolant temperature (°F): Minimum ______ Maximum ______
Design coolant flow rate (gpm): ______
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment: ______

☐ **Carbon Absorber**
Manufacturer: ______ Year installed: ______
What do you call this control equipment: ______
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______
Estimated capture efficiency (%):______ Basis for efficiency: ______
Design control efficiency (%):______ Basis for efficiency: ______
Type: ☐ On-site regenerative ☐ Disposable
Maximum design outlet organic compound concentration (ppmv): ______
Carbon replacement frequency or regeneration cycle time (specify units): ______
Maximum temperature of the carbon bed, after regeneration (including any cooling cycle): ______
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment: ______

☐ **Dry Scrubber**
Manufacturer: ______ Year installed: ______
What do you call this control equipment: ______
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______
Estimated capture efficiency (%):______ Basis for efficiency: ______
Design control efficiency (%):______ Basis for efficiency: ______
Reagent(s) used: Type: ______ Injection rate(s): ______
Operating pressure drop range (inches of water): Minimum: ______ Maximum: ______
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment: ______

☐ **Paint booth filter**
Type: ☐ Paper ☐ Fiberglass ☐ Water curtain ☐ Other ______
Design control efficiency (%):______ Basis for efficiency: ______

☒ **Other,** describe HIGH EFFICIENCY DRIFT ELIMINATORS
Manufacturer: SELECTION PENDING Year installed: SECOND QUARTER 2008
What do you call this control equipment: DRIFT ELIMINATORS
Pollutant(s) controlled: ☒ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☒ Other PM10
Estimated capture efficiency (%): 100 Basis for efficiency: ENGINEERING DESIGN

Design control efficiency (%): >99.95 Basis for efficiency: ENGINEERING DESIGN DRIFT RATE OF 0.0005%

☒ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:

6. Attach a Process or Activity Flow Diagram to this application for each air contaminant source included in the application. The diagram should indicate their relationships to one another. See the line by line PTI instructions for additional information.

7. Emissions egress point(s) information: PTIs which allow total emissions in excess of the thresholds listed below will be subject to an air quality modeling analysis. This analysis is to assure that the impact from the requested project will not exceed Ohio=s Acceptable Incremental Impacts for criteria pollutants and/or Maximum Allowable Ground Level Concentrations (MAGLC) for air toxics. Permit requests that would have unacceptable impacts can not be approved as proposed. See the line by line PTI instructions for additional information.

   Complete the tables below if the requested allowable annual emission rate for this PTI exceeds any of the following:

   - Particulate Matter (PM10): 10 tons per year
   - Sulfur Dioxide (SO2): 25 tons per year
   - Nitrogen Oxides (NOx): 25 tons per year
   - Carbon Monoxide (CO): 100 tons per year
   - Air Toxic: 1 ton per year. An air toxic is any air pollutant for which the American Council of Governmental Industrial Hygienists (ACGIH) has established a Threshold Limit Value (TLV).

   Complete Table 7-A below for each stack emissions egress point. An egress point is a point at which emissions from an air contaminant source are released into the ambient (outside) air. List each individual egress point on a separate line.

Table 7-A, Stack Egress Point Information

Company Name or ID for the Egress Point (examples: Stack A; Boiler Stack; etc.)	Type Code*	Stack Egress Point Shape and Dimensions (in)(examples: round 10 inch ID; rectangular 14 X 16 inches; etc.)	Stack Egress Point Height from the Ground (ft)	Stack Temp. at Max. Capacity (F)	Stack Flow Rate at Max. Capacity (ACFM)	Minimum Distance to the Property Line (ft)
COOLING TOWER 1	A	ROUND 239 FEET ID	580	108	29,318,400	890

*Type codes for stack egress points:

A. vertical stack (unobstructed): There are no obstructions to upward flow in or on the stack such as a rain cap.
B. vertical stack (obstructed): There are obstructions to the upward flow, such as a rain cap, which prevents or inhibits the air flow in a vertical direction.
C. non-vertical stack: The stack directs the air flow in a direction which is not directly upward.

Complete Table 7-B below for each fugitive emissions egress point. List each individual egress point on a separate line. Refer to the description of the fugitive egress point type codes below the table for use in completing the type code column of the table. For air contaminant sources like roadways and storage piles, only the first 5 columns need to be completed. For an air contaminant source with multiple fugitive emissions egress points, include only the primary egress points.

Table 7-B, Fugitive Egress Point Information

Company ID for the Egress Point (examples; Garage Door B, Building C; Roof Monitor; etc.)	Type Code*	Egress Point Description (examples: garage door, 12 X 30 feet, west wall; outside gravel storage piles; etc.)	Fugitive Egress Point Height from the Ground (ft)	Minimum Distance to the Property Line (ft)	Exit Gas Temp. (F)

*Type codes for fugitive egress point:

D. door or window
E. other opening in the building without a duct
F. no stack and no building enclosing the air contaminant source (e.g., roadways)

Complete Table 7-C below for each Stack Egress Point identified in Table 7-A above. In each case, use the dimensions of the largest nearby building, building segment or structure. List each individual egress point on a separate line. Use the same Company Name or ID for the Egress Point in Table 7-C that was used in Table 7-A. See the line by line PTI instructions for additional information.

Table 7-C, Egress Point Additional Information (Add rows as necessary)

Company ID or Name for the Egress Point	Building Height (ft)	Building Width (ft)	Building Length (ft)
Cooling Tower 1	580 (cooling tower 2)	240	240

8. Request for Federally Enforceable Limits

As part of this permit application, do you wish to propose voluntary restrictions to limit emissions in order to avoid specific requirements listed below, (i.e., are you requesting federally enforceable limits to obtain synthetic minor status)?

☐ yes
☒ no
☐ not sure - please contact me if this affects me

If yes, why are you requesting federally enforceable limits? Check all that apply.

a. ☐ to avoid being a major source (see OAC rule 3745-77-01)
b. ☐ to avoid being a major MACT source (see OAC rule 3745-31-01)
c. ☐ to avoid being a major modification (see OAC rule 3745-31-01)
d. ☐ to avoid being a major stationary source (see OAC rule 3745-31-01)
e. ☐ to avoid an air dispersion modeling requirement (see Engineering Guide # 69)
f. ☐ to avoid another requirement. Describe: ____________________

If you checked a., b. or d., please attach a facility-wide potential to emit (PTE) analysis (for each pollutant) and synthetic minor strategy to this application. (See line by line instructions for definition of PTE.) If you checked c., please attach a net emission change analysis to this application.

9. If this air contaminant source utilizes any continuous emissions monitoring equipment for indicating or demonstrating compliance, complete the following table. This does not include continuous parametric monitoring systems.

Company ID for Egress Point	Type of Monitor	Applicable performance specification (40 CFR 60, Appendix B)	Pollutant(s) Monitored

10. Do you wish to permit this air contaminant source as a portable source, allowing relocation within the state in accordance with OAC rule 3745-31-03 or OAC rule 3745-31-05?

☐ yes - Note: notification requirements in rules cited above must be followed.
☒ no

11. The appropriate Emissions Activity Category (EAC) form(s) must be completed and attached for each air contaminant source. At least one complete EAC form must be submitted for each air contaminant source for the application to be considered complete. Refer to the list attached to the PTI instructions.

FOR OHIO EPA USE
FACILITY ID:________________

EU ID: __________ PTI
#.

EMISSIONS ACTIVITY CATEGORY FORM
GENERAL PROCESS OPERATION – COOLING TOWER 1

This form is to be completed for each process operation when there is no specific emissions activity category (EAC) form applicable. If there is more than one end product for this process, copy and complete this form for each additional product (see instructions). Several State/Federal regulations which may apply to process operations are listed in the instructions. Note that there may be other regulations which apply to this emissions unit which are not included in this list.

1. Reason this form is being submitted (Check one)

☒ New Permit ☐ Renewal or Modification of Air Permit Number(s) (e.g. P001)__________

2. Maximum Operating Schedule: 24 hours per day ; 365 days per year

If the schedule is less than 24 hours/day or 365 days/year, what limits the schedule to less than maximum? See instructions for examples. ________________

3. End product of this process: COOLED COOLING WATER

4. Hourly production rates (indicate appropriate units). Please see the instructions for clarification of "Maximum" and "Average" for new versus existing operations:

Hourly	Rate	Units (e.g., widgets)
Average production	240,850,000 LB	COOLED COOLING WATER
Maximum production	240,850,000 LB	COOLED COOLING WATER

5. Annual production rates (indicate appropriate units) Please see the instructions for clarification of "Maximum" and "Actual" for new versus existing operations:

Annual	Rate	Units (e.g., widgets)
Actual production	1,055,000,000 TONS	COOLED COOLING WATER
Maximum production	1,055,000,000 TONS	COOLED COOLING WATER

6. Type of operation (please check one):

☒ Continuous
☐ Batch (please complete items below)

Minimum cycle* time (minutes): _________
Minimum time between cycles (minutes): _________
Maximum number of cycles per daily 24 hour period: _________
(Note: include cycle time and set up/clean up time.)

*"Cycle" refers to the time the equipment is in operation.

7. Materials used in process at maximum hourly production rate (add rows/pages as needed):

Material	Physical State at Standard Conditions	Principle Use	Amount**
PRETREATMENT WATER	LIQUID	COOLING	425,130 GAL/HR
BIOLOGICAL TREATMENT WATER	LIQUID	COOLING	57,450 GAL/HR
BLOWDOWN RECEIVER WATER	LIQUID	COOLING	11,100 GAL/HR
POWER BLOCK COOLING WATER	LIQUID	COOLING	360 GAL/HR
COOLING WATER	LIQUID	COOLING	28.9 MMGAL/HR

** Please indicate the amount **and** rate (e.g., lbs/hr, gallons/hr, lbs/cycle, etc.).

8. Please provide a narrative description of the process below (e.g., coating of metal parts using high VOC content coatings for the manufacture of widgets; emissions controlled by thermal oxidizer...):

COOLING WATER PASSES THROUGH THE TOWER, IS COOLED, AND IS RECYCLED BACK TO THE STEAM TURBINES. DURING THIS PROCESS, SOME OF THE WATER IS EVAPORATED BY NATURAL DRAFT. DRIFT ELIMINATORS REDUCE THE QUANTITY OF WATER VAPOR EMITTED AND THEREBY REDUCE PARTICULATE EMISSIONS.

Section II - Specific Air Contaminant Source Information

NOTE: One copy of this section should be filled out for each air contaminant source covered by this PTI application. See the line by line PTI instructions for additional information.

1. Company identification (name for air contaminant source for which you are applying): COOLING TOWER 2

2. List all equipment that are part of this air contaminant source: COOLING TOWER 2

3. Air Contaminant Source Installation or Modification Schedule (must be completed regardless of date of installation or modification):

   When did/will you begin to install or modify the air contaminant source? (month/year) SECOND QUARTER 2008

   When did/will you begin to operate the air contaminant source? (month/year) THIRD QUARTER 2011 **OR** after issuance of PTI ____________

4. Emissions Information: The following table requests information needed to determine the applicable requirements and the compliance status of this air contaminant source with those requirements. Suggestions for how to estimate emissions may be found in the instructions to the Emissions Activity Category (EAC) forms required with this application. If you need further assistance, contact your Ohio EPA permit representative.

   - If total potential emissions of HAPs or any Air Toxic is greater than 1 ton/yr, fill in the table for that (those) pollutant(s). For all other pollutants, if "Emissions before controls (max), lb/hr" multiplied by 24 hours/day is greater than 10 lb/day, fill in the table for that pollutant.
   - If you have no add-on control equipment, "Emissions before controls= will be the same as "Actual emissions"
   - Annual emissions should be based on operating 8760 hr/yr unless you are requesting operating restrictions to limit emissions in line # 8 or have described inherent limitations below.
   - If you use units other than lb/hr or ton/yr, specify the units used (e.g., gr/dscf, lb/ton charged, lb/MMBtu, ton/12-months).
   - Requested Allowable (ton/yr) is often equivalent to Potential to Emit (PTE) as defined in OAC rule 3745-31-01 and OAC rule 3745-77-01.

Pollutant	Emissions before controls (max) (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year)	Requested Allowable (lb/hr)	Requested Allowable (ton/year)
Particulate emissions (PE) (formerly particulate matter, PM)	4,817	2.4	10.5	2.4	10.5
PM_{10} (PM < 10 microns in diameter)	4,817	2.4	10.5	2.4	10.5
Sulfur dioxide (SO_2)	0	0	0	0	0
Nitrogen oxides (NO_x)	0	0	0	0	0
Carbon monoxide (CO)	0	0	0	0	0
Organic compounds (OC)	0	0	0	0	0
Volatile organic compounds (VOC)	0	0	0	0	0
Total HAPs	0.22	0.00011	0.00048	0.00011	0.00048
Highest single HAP: (Mn)	0.21	0.00011	0.00045	0.00011	0.00045
Air Toxics (see instructions):	0.22	0.00011	0.00048	0.00011	0.00048

Section II - Specific Air Contaminant Source Information

Provide your calculations as an attachment and explain how all process variables and emission factors were selected. Note the emissions factor(s) employed and document the origin. Example: AP-42, Table 4.4-3 (8/97); stack test, Method 5, 4/96; mass balance based on MSDS; etc.

5. **Does this air contaminant source employ emissions control equipment?**

☒ **Yes** - fill out the applicable information below.

☐ **No** - proceed to item # 6.

Note: Pollutant abbreviations used below: Particulates = PE; Organic compounds = OC; Sulfur dioxide = SO_2; Nitrogen oxides = NOx; Carbon monoxide = CO

☐ **Cyclone/Multiclone**

Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________
Estimated capture efficiency (%): ________ Basis for efficiency: ____________
Design control efficiency (%):________ Basis for efficiency: ____________
Type: ☐ Cyclone ☐ Multiclone ☐ Rotoclone ☐ Other ____________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Fabric Filter/Baghouse**

Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________
Estimated capture efficiency (%):________ Basis for efficiency: ____________
Design control efficiency (%):________ Basis for efficiency: ____________
Operating pressure drop range (inches of water): Minimum: ________Maximum: ________
Pressure type: ☐ Negative pressure ☐ Positive pressure
Fabric cleaning mechanism: ☐ Reverse air ☐ Pulse jet ☐ Shaker ☐ Other ________
☐ Lime injection or fabric coating agent used: Type: ________ Feed rate: ________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Wet Scrubber**

Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________
Estimated capture efficiency (%):________ Basis for efficiency: ____________
Design control efficiency (%):________ Basis for efficiency: ____________
Type: ☐ Spray chamber ☐ Packed bed ☐ Impingement ☐ Venturi ☐ Other ____________
Operating pressure drop range (inches of water): Minimum: ________ Maximum: ________
pH range for scrubbing liquid: Minimum: ________ Maximum: ________
Scrubbing liquid flow rate (gal/min): ________
Is scrubber liquid recirculated? ☐ Yes ☐ No
Water supply pressure (psig): ________ NOTE: This item for spray chambers only.
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Electrostatic Precipitator**

Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________

Estimated capture efficiency (%):__________ Basis for efficiency: ____________________
Design control efficiency (%):__________ Basis for efficiency: ____________________
Type: ☐ Plate-wire ☐ Flat-plate ☐ Tubular ☐ Wet ☐ Other ___________
Number of operating fields: ___________

☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Concentrator**

Manufacturer: ____________________ Year installed: ____________________
What do you call this control equipment: ____________________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______________
Estimated capture efficiency (%):__________ Basis for efficiency: ____________________
Design regeneration cycle time (minutes): ___________
Minimum desorption air stream temperature (°F): _________
Rotational rate (revolutions/hour): ___________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Catalytic Incinerator**

Manufacturer: ____________________ Year installed: ____________________
What do you call this control equipment: ____________________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______________
Estimated capture efficiency (%):__________ Basis for efficiency: ____________________
Design control efficiency (%):__________ Basis for efficiency: ____________________
Minimum inlet gas temperature (°F): ___________
Combustion chamber residence time (seconds): ___________
Minimum temperature difference (°F) across catalyst during air contaminant source operation: ________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Thermal Incinerator/Thermal Oxidizer**

Manufacturer: ____________________ Year installed: ____________________
What do you call this control equipment: ____________________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______________
Estimated capture efficiency (%):__________ Basis for efficiency: ____________________
Design control efficiency (%):__________ Basis for efficiency: ____________________
Minimum operating temperature (°F) and location: ______________________ (See line by line instructions.)
Combustion chamber residence time (seconds): ___________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:
____

☐ **Flare**

Manufacturer: ____________________ Year installed: ____________________
What do you call this control equipment: ____________________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ______________
Estimated capture efficiency (%):__________ Basis for efficiency: ____________________
Design control efficiency (%):__________ Basis for efficiency: ____________________
Type: ☐ Enclosed ☐ Elevated (open)
Ignition device: ☐ Electric arc ☐ Pilot flame
Flame presence sensor: ☐ Yes ☐ No
☐ This is the only control equipment on this air contaminant source

If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:

____

☐ **Condenser**
Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________
Estimated capture efficiency (%):________ Basis for efficiency: ____________
Design control efficiency (%):________ Basis for efficiency: ____________

Type: ☐ Indirect contact ☐ Direct contact
Maximum exhaust gas temperature (°F) during air contaminant source operation: ________
Coolant type: ____________
Design coolant temperature (°F): Minimum ________ Maximum ________
Design coolant flow rate (gpm): ____________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:

____

☐ **Carbon Absorber**
Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________
Estimated capture efficiency (%):________ Basis for efficiency: ____________
Design control efficiency (%):________ Basis for efficiency: ____________
Type: ☐ On-site regenerative ☐ Disposable
Maximum design outlet organic compound concentration (ppmv): ____________
Carbon replacement frequency or regeneration cycle time (specify units): ____________
Maximum temperature of the carbon bed, after regeneration (including any cooling cycle): ________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:

____

☐ **Dry Scrubber**
Manufacturer: ____________ Year installed: ____________
What do you call this control equipment: ____________
Pollutant(s) controlled: ☐ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☐ Other ____________
Estimated capture efficiency (%):________ Basis for efficiency: ____________
Design control efficiency (%):________ Basis for efficiency: ____________
Reagent(s) used: Type: ____________ Injection rate(s): ____________
Operating pressure drop range (inches of water): Minimum: ________ Maximum: ________
☐ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:

____

☐ **Paint booth filter**
Type: ☐ Paper ☐ Fiberglass ☐ Water curtain ☐ Other ____________
Design control efficiency (%):________ Basis for efficiency: ____________

☒ **Other**, describe HIGH EFFICIENCY DRIFT ELIMINATORS
Manufacturer: SELECTION PENDING Year installed: SECOND QUARTER 2008
What do you call this control equipment: DRIFT ELIMINATORS
Pollutant(s) controlled: ☒ PE ☐ OC ☐ SO_2 ☐ NOx ☐ CO ☒ Other PM10
Estimated capture efficiency (%): 100 Basis for efficiency: ENGINEERING DESIGN

Design control efficiency (%): >99.95 Basis for efficiency: ENGINEERING DESIGN DRIFT RATE OF 0.0005%

Section II - Specific Air Contaminant Source Information

☒ This is the only control equipment on this air contaminant source
If no, this control equipment is: ☐ Primary ☐ Secondary ☐ Parallel
List any other air contaminant sources that are also vented to this control equipment:

6. Attach a Process or Activity Flow Diagram to this application for each air contaminant source included in the application. The diagram should indicate their relationships to one another. See the line by line PTI instructions for additional information.

7. Emissions egress point(s) information: PTIs which allow total emissions in excess of the thresholds listed below will be subject to an air quality modeling analysis. This analysis is to assure that the impact from the requested project will not exceed Ohio=s Acceptable Incremental Impacts for criteria pollutants and/or Maximum Allowable Ground Level Concentrations (MAGLC) for air toxics. Permit requests that would have unacceptable impacts can not be approved as proposed. See the line by line PTI instructions for additional information.

   Complete the tables below if the requested allowable annual emission rate for this PTI exceeds any of the following:

   - Particulate Matter (PM10): 10 tons per year
   - Sulfur Dioxide (SO2): 25 tons per year
   - Nitrogen Oxides (NOx): 25 tons per year
   - Carbon Monoxide (CO): 100 tons per year
   - Air Toxic: 1 ton per year. An air toxic is any air pollutant for which the American Council of Governmental Industrial Hygienists (ACGIH) has established a Threshold Limit Value (TLV).

   Complete Table 7-A below for each stack emissions egress point. An egress point is a point at which emissions from an air contaminant source are released into the ambient (outside) air. List each individual egress point on a separate line.

Table 7-A, Stack Egress Point Information

Company Name or ID for the Egress Point (examples: Stack A; Boiler Stack; etc.)	Type Code*	Stack Egress Point Shape and Dimensions (in)(examples: round 10 inch ID; rectangular 14 X 16 inches; etc.)	Stack Egress Point Height from the Ground (ft)	Stack Temp. at Max. Capacity (F)	Stack Flow Rate at Max. Capacity (ACFM)	Minimum Distance to the Property Line (ft)
COOLING TOWER 2	A	ROUND 239 FEET ID	580	108	29,318,400	290

*Type codes for stack egress points:

A. vertical stack (unobstructed): There are no obstructions to upward flow in or on the stack such as a rain cap.
B. vertical stack (obstructed): There are obstructions to the upward flow, such as a rain cap, which prevents or inhibits the air flow in a vertical direction.
C. non-vertical stack: The stack directs the air flow in a direction which is not directly upward.

Complete Table 7-B below for each fugitive emissions egress point. List each individual egress point on a separate line. Refer to the description of the fugitive egress point type codes below the table for use in completing the type code column of the table. For air contaminant sources like roadways and storage piles, only the first 5 columns need to be completed. For an air contaminant source with multiple fugitive emissions egress points, include only the primary egress points.

Table 7-B, Fugitive Egress Point Information

Company ID for the Egress Point (examples; Garage Door B, Building C; Roof Monitor; etc.)	Type Code*	Egress Point Description (examples: garage door, 12 X 30 feet, west wall; outside gravel storage piles; etc.)	Fugitive Egress Point Height from the Ground (ft)	Minimum Distance to the Property Line (ft)	Exit Gas Temp. (F)

*Type codes for fugitive egress point:

D. door or window
E. other opening in the building without a duct
F. no stack and no building enclosing the air contaminant source (e.g., roadways)

Complete Table 7-C below for each Stack Egress Point identified in Table 7-A above. In each case, use the dimensions of the largest nearby building, building segment or structure. List each individual egress point on a separate line. Use the same Company Name or ID for the Egress Point in Table 7-C that was used in Table 7-A. See the line by line PTI instructions for additional information.

Table 7-C, Egress Point Additional Information (Add rows as necessary)

Company ID or Name for the Egress Point	Building Height (ft)	Building Width (ft)	Building Length (ft)
Cooling Tower 2	580 (cooling tower 1)	240	240

8. Request for Federally Enforceable Limits

As part of this permit application, do you wish to propose voluntary restrictions to limit emissions in order to avoid specific requirements listed below, (i.e., are you requesting federally enforceable limits to obtain synthetic minor status)?

☐ yes
☒ no
☐ not sure - please contact me if this affects me

If yes, why are you requesting federally enforceable limits? Check all that apply.

a. ☐ to avoid being a major source (see OAC rule 3745-77-01)
b. ☐ to avoid being a major MACT source (see OAC rule 3745-31-01)
c. ☐ to avoid being a major modification (see OAC rule 3745-31-01)
d. ☐ to avoid being a major stationary source (see OAC rule 3745-31-01)
e. ☐ to avoid an air dispersion modeling requirement (see Engineering Guide # 69)
f. ☐ to avoid another requirement. Describe: ____________________

If you checked a., b. or d., please attach a facility-wide potential to emit (PTE) analysis (for each pollutant) and synthetic minor strategy to this application. (See line by line instructions for definition of PTE.) If you checked c., please attach a net emission change analysis to this application.

9. If this air contaminant source utilizes any continuous emissions monitoring equipment for indicating or demonstrating compliance, complete the following table. This does not include continuous parametric monitoring systems.

Company ID for Egress Point	Type of Monitor	Applicable performance specification (40 CFR 60, Appendix B)	Pollutant(s) Monitored

10. Do you wish to permit this air contaminant source as a portable source, allowing relocation within the state in accordance with OAC rule 3745-31-03 or OAC rule 3745-31-05?

☐ yes - Note: notification requirements in rules cited above must be followed.
☒ no

11. The appropriate Emissions Activity Category (EAC) form(s) must be completed and attached for each air contaminant source. At least one complete EAC form must be submitted for each air contaminant source for the application to be considered complete. Refer to the list attached to the PTI instructions.

FOR OHIO EPA USE
FACILITY ID:__________________
EU ID:__________ PTI #:

EMISSIONS ACTIVITY CATEGORY FORM
GENERAL PROCESS OPERATION – COOLING TOWER 2

This form is to be completed for each process operation when there is no specific emissions activity category (EAC) form applicable. If there is more than one end product for this process, copy and complete this form for each additional product (see instructions). Several State/Federal regulations which may apply to process operations are listed in the instructions. Note that there may be other regulations which apply to this emissions unit which are not included in this list.

1. Reason this form is being submitted (Check one)

☒ New Permit ☐ Renewal or Modification of Air Permit Number(s) (e.g. P001)____________

2. Maximum Operating Schedule: 24 hours per day ; 365 days per year

If the schedule is less than 24 hours/day or 365 days/year, what limits the schedule to less than maximum? See instructions for examples. ____________________

3. End product of this process: COOLED COOLING WATER

4. Hourly production rates (indicate appropriate units). Please see the instructions for clarification of "Maximum" and "Average" for new versus existing operations:

Hourly	Rate	Units (e.g., widgets)
Average production	240,850,000 LB	COOLED COOLING WATER
Maximum production	240,850,000 LB	COOLED COOLING WATER

5. Annual production rates (indicate appropriate units) Please see the instructions for clarification of "Maximum" and "Actual" for new versus existing operations:

Annual	Rate	Units (e.g., widgets)
Actual production	1,055,000,000 TONS	COOLED COOLING WATER
Maximum production	1,055,000,000 TONS	COOLED COOLING WATER

6. Type of operation (please check one):

☒ Continuous
☐ Batch (please complete items below)

Minimum cycle* time (minutes): __________
Minimum time between cycles (minutes): __________
Maximum number of cycles per daily 24 hour period: __________
(Note: include cycle time and set up/clean up time.)

*"Cycle" refers to the time the equipment is in operation.

7. Materials used in process at maximum hourly production rate (add rows/pages as needed):

Material	Physical State at Standard Conditions	Principle Use	Amount**
PRETREATMENT WATER	LIQUID	COOLING	425,130 GAL/HR
BIOLOGICAL TREATMENT WATER	LIQUID	COOLING	57,450 GAL/HR
BLOWDOWN RECEIVER WATER	LIQUID	COOLING	11,100 GAL/HR
POWER BLOCK COOLING WATER	LIQUID	COOLING	360 GAL/HR
COOLING WATER	LIQUID	COOLING	28.9 MMGAL/HR

** Please indicate the amount **and** rate (e.g., lbs/hr, gallons/hr, lbs/cycle, etc.).

8. Please provide a narrative description of the process below (e.g., coating of metal parts using high VOC content coatings for the manufacture of widgets; emissions controlled by thermal oxidizer...):

COOLING WATER PASSES THROUGH THE TOWER, IS COOLED, AND IS RECYCLED BACK TO THE STEAM TURBINES. DURING THIS PROCESS, SOME OF THE WATER IS EVAPORATED BY NATURAL DRAFT. DRIFT ELIMINATORS REDUCE THE QUANTITY OF WATER VAPOR EMITTED AND THEREBY REDUCE PARTICULATE EMISSIONS.