# **AIR POLLUTION CONTROL**

# Shelby County Health Department

# PERMIT TO OPERATE TITLE V - MAJOR SOURCE

### PERMIT NUMBER: 00097-01TV(R)

# Covoro Mining Solutions, LLC 2571 Fite Road

Millington, Tennessee 38127

**ISSUANCE DATE:** November 22, 2022

EXPIRATION DATE: November 22, 2027 REVISION DATE: January 29, 2025

This permit fulfills the requirements of Title V of the Federal Clean Air Act (42 U.S.C. 7661a-7661e) and the federal regulations promulgated in 40 CFR Part 70. This permit is issued in accordance with Shelby County Air Code Section 3-5, which adopts by reference Rule 1200-3-9.02(11) of the Tennessee Air Pollution Control Regulations. The permittee has been granted permission to operate an air contaminant source in accordance with the emission limitations, monitoring, record-keeping, reporting, and all other requirements set forth herein.

A permit condition may be appealed by filing a petition for reconsideration within thirty (30) days after the mailing date of the permit.

This permit may be subject to revocation, suspension, modification or amendment by the Technical Secretary for cause including the evidence of non-compliance with any of the above, or for any misrepresentation made in the application(s), supporting data entered therein or attached thereto, or any subsequent submittal or supporting data, or for any alterations affecting the emissions from this source.

Wasim Khokhar, Technical Manager Pollution Control Section

Issuance of this permit shall not relieve any owner or operator of the responsibility to comply fully with any other requirements of local, State, or Federal law.

POST AND FILE AT INSTALLATION ADDRESS

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# **SECTION I – FACILITY INFORMATION**

Facility Name: Facility Address:	Covoro Mining Solutions, LLC 2571 Fite Road Millington, Tennessee 38127
Facility Phone:	(901) 353-7213
Mailing Address:	Same as above
Facility Owner: Owner Address:	Covoro Mining Solutions, LLC 1007 Market Street Wilmington, Deleware 19898
<b>Responsible Official, Title:</b> Mailing Address:	Peter Schilthuis, Plant Manager (Amended September 1, 2023) 2571 Fite Road Millington, Tennessee 38127
Telephone:	(901) 353-7213
Environmental Contact(s): Mailing Address: Telephone:	Kimberly Sass, Environmental Leader Same as above (901) 353-7146
Billing Contact: Mailing Address: Telephone:	Kimberly Sass, Environmental Leader Same as above (901) 353-7146
Owner's Registered Agent:	CT Corporation Systems 300 Montvue Road Knoxville, Tennessee 37919-5546
Telephone:	(833) 862-7827
Facility's Primary Activity:	Industrial Inorganic Chemicals Manufacturing
NAICS Code: SIC Code:	325188 2819

### **SECTION II – APPLICATION INFORMATION**

Application(s) Dated:	November 7, 2024 (Supplement to January 31 submittal)
	April 24, 2024 (Supplement to January 31 submittal)
	January 31, 2024 (Permit corrections and regulatory updates)
	January 8, 2024 (NOCS update)
	August 29, 2023 (Responsible official change)
	January 27, 2021 (Updated Title V permit renewal and modification application)
Application(s) Received	November 8, 2024 (Supplement to January 31 submittal)
	April 24, 2024 (Supplement to January 31 submittal)
	February 1, 2024 (Permit corrections and regulatory updates)
	January 9, 2024 (NOCS update)
	August 29, 2023 (Responsible official change)
	January 27, 2021 (Updated Title V permit renewal and modification application)
<b>Completeness Determination:</b>	May 28, 2024 – Complete
	March 19, 2021- Complete
Public Notice:	Not applicable to January 2025 permit amendments
I ubic Notice.	August 30, 2022
Public Hearing:	Not requested
Surrounding States Notice:	Not applicable to January 2025 permit amendments
-	August 30, 2022
Comments Received:	None
To FDA for Deview.	Not applicable to January 2025 parmit amondments
TO EFA IOF Review:	October 5, 2022
EPA Comments:	None
Previous Permit Issue Date:	February 15, 2013
<b>Renewed Permit Issue Date:</b>	November 22, 2022
Amended Permit Issue Date:	January 29, 2025
Type of Source:	

- [x] Major Title V
- [x] Major NSR/PSD (NO<sub>x</sub> and CO)
- [x] NSPS (40 CFR Part 60) (Subparts A, IIII)
- [] NESHAP (40 CFR Part 61)
- [x] MACT (40 CFR Part 63) (Subparts A, G, SS, TT, UU, YY, FFFF, ZZZZ, DDDDD)
- [] BACT

#### **SECTION III – EMISSION UNITS, POINTS and CONTROLS**

Emission Unit	Source Identification	Description
1	Aminonitrile Process	Produces aminonitriles from ketones, ammonia, and hydrogen cyanide (HCN)
2	Hydrogen Cyanide Process	Produces HCN
3	Solid Cyanides	Produces sodium and potassium cyanides by the reaction of the hydroxide with HCN
4	Power	Boilers that produce steam used in various processes on site

# TABLE 3.0Emission Units

# TABLE 3.1Emission Unit (EU) 1(Aminonitriles (AN) Process)

Emission Source	Description	Emission Point No. (EPN)	Control Device	Pollutants <sup>1</sup>
	AN Production Process Vents (including Reactor) (AN Flare exhaust)	001 (Flare)		NO <sub>x</sub> , CO, SO <sub>2</sub> , PM, VOC, HAP (HCN) and NH <sub>3</sub>
A01	Materials/Product Storage Tank	051	Flare	
	Materials/Product Storage Tank	052		
	Materials/Product Storage Tank	053		Insignificant Activities
	Wastewater Storage Tank	054	Flare	
A02	Ketones Storage Tank No. 1	055	None	
	Ketones Storage Tank No. 2	056	None	

<sup>1</sup> Nitrogen Oxides (NO<sub>x</sub>), Carbon Monoxide (CO), Sulfur Dioxide (SO <sub>2</sub>), Particulate Matter (PM), Volatile Organic Compounds (VOC), Hydrogen Cyanide (HCN), Hazardous Air Pollutant (HAP), and Ammonia (NH<sub>3</sub>)

# TABLE 3.2Emission Unit 2(Hydrogen Cyanide (HCN) Process)

Emission Source	Description		EPN	Control Device	Pollutants	
	Start-up Flare	The Start-up and Run Flares are used to control converter feed gases and excess converter Off-	101	Flare (Air assist)		
C01	Run Flare	Gases generated during the startup and shutdown of the HCN process and excess HCN Absorber Off-Gas (AOG) generated during the running of the HCN process.	102	Flare	NO <sub>x</sub> , CO, SO <sub>2</sub> , PM, VOC, HAP (HCN, Acetonitrile and Acrylonitrile), NH <sub>3</sub> and Sulfuric Acid	
	Fuel Burning Installa	el Burning Installation/Process Heater 103 el Burning Installation/Process Heater 104		Oxygen		
	Fuel Burning Installa			Trim		
	Fuel Burning Installa	ation/Process Heater	105	Systems		
<b>G</b> 22	Tank Farm Flare (back-up)     Vapors from storage tanks, product transfers, and pipeline shutdowns are collected and		108	Flare	NO <sub>x</sub> , CO, SO <sub>2</sub> , PM, VOC, and HAP (HCN, Methanol,	
C02	Tank Farm Vent Scrubber (primary)	scrubbed in the Vent Scrubber (a packed column) or combusted in the Tank Farm Flare	109	Scrubber	Acetonitrile and Acrylonitrile)	
C04	Process Wastewater Vents (multiple)		110	None	VOC, HAP (HCN, Methanol, Acetonitrile and Acrylonitrile) and NH <sub>3</sub>	

#### TABLE 3.3 Emission Unit 3 (Solid Cyanides Process)

Emission Source	Description		EPN	Control Device	Pollutants	
N03	Process Air Vent		401	None	NO <sub>x</sub> , CO, SO <sub>2</sub> , PM, VOC, HAP (HCN, Acetonitrile and Acrylonitrile) and NH <sub>3</sub>	
N01	Process Air Heater Combustion Vent		402	Oxygen Trim System	NO <sub>x</sub> , CO, SO <sub>2</sub> , PM, and VOC	
N03	Dust & Fume Scrubber	The Dust & Fume Scrubber (EPN-404) was installed to prevent personnel exposure to dusts and fumes inside the process building.	404	Scrubber	NO <sub>x</sub> , CO, SO <sub>2</sub> , PM, VOC, HAP (HCN, Acetonitrile and Aprilopitally and NH2	
	Heater Air Vent		405	None	Acrylonitrile) and INH <sub>3</sub>	
	Filter Vent		406	None		
NO2	Hotwell Vent		407	None	VOC, HAP (HCN, Acetonitrile	
1N02	Feedwell Vent		408	None	and Acrylonitrile), and NH <sub>3</sub>	

# TABLE 3.4Emission Unit 4(Power Area)

Emission Source	Description	EPN	Control Device	Pollutants
P01 and 02	Boilers #1 and #2	501	Oxygen	
P03	Boiler #3	502	Trim	NO <sub>x</sub> , CO, SO <sub>2</sub> , PM and VOC
P04	Boiler #4	503	Systems	

#### TABLE 3.5 Emission Unit 5 (Emergency Engines)

Emission Source	Description	EPN	Control Device	Pollutants
	Fire Pump Engine #2 – ACRN South Engine	517		
	Fire Pump Engine #3 – MMA North Engine	518		
Emergency Engines	Fire Pump Engine #4 – MMA South Engine	519		
	HCN Tank Farm Emergency Generator Engine #1	520	N	
	HCN Tank Farm Emergency Generator Engine #2	521	None	
	Generac 755 HP (500 kW) Diesel-Fired Emergency Generators #3	522		
	Generac 755 HP (500 kW) Diesel-Fired Emergency Generators #4	523		

## **SECTION IV – PERMIT CONDITIONS**

#### FACILITY-WIDE REQUIREMENTS

#### **Emission Limits and Restrictions**

Condition No.	Pollutant (Parameter)	Limit	Citation	
1	PM/PM <sub>10</sub> , SO <sub>2</sub> , VOC, CO and NO <sub>x</sub>	12-month rolling stack emission limits	Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-902(11)(e)1.(iii)(I)]	
2	Opacity	Not to exceed 20%	Shelby County Air Code Section 3-17 [Reference Rules and Regulations of Tennessee, Rule 1200-3-501(1)]	
		Local Only Conditio	n(s)	
3	VOC			
4	VOC	Handling, Storage, and	Shelby County Air Code Section 3-22	
5	VOC	Disposal of VOCs	Tennessee, Rule 1200-3-1806	
6	VOC			

#### **TABLE 4.0.1**

#### Emission Limits and Restrictions:

1. Total facility-wide consecutive 12-month rolling period emissions (tons/12-months) from this facility, excluding insignificant activities, shall not exceed the following:

Pollutant	Tons/12-months
PM/PM <sub>10</sub>	41.0
$SO_2$	6.1
VOC	74.4 (Excluding Fugitives Emissions)
СО	332.4
NO <sub>x</sub>	1,085.6

#### **TABLE 4.0.2**

<sup>1</sup> Includes emergency engines incorporated under Construction Permit No. 00097-21PC.

2. Visible emissions from any emission point at this source, unless otherwise specified herein, shall not exceed twenty percent (20%) in opacity for more than five (5) minutes in any 1-hour or more than twenty (20) minutes in any twenty-four (24) hour period.

#### Local Only VOC Rule Requirements:

3. The facility owner or operator shall not cause, allow, or permit the disposal of more than 5 kilograms (kg) (11 pounds [lb]) of any volatile organic compound (VOC), or of any materials containing more than 5 kg (11 lb) of any VOCs, in any 1 day in a manner that would permit the evaporation from the facility of that VOC into the ambient air in excess of the minimum reasonably attainable.

#### Emission Limits and Restrictions (continued):

- 4. The facility owner or operator shall not use open containers for the storage or disposal of materials impregnated with VOCs that are used for surface preparation, cleanup, coating removal or equipment cleaning or maintenance.
- 5. The facility owner or operator shall not store in open containers spent or fresh VOC to be used for surface preparation, cleanup, coating removal, or facility or equipment cleaning or maintenance.
- 6. The facility owner or operator shall not use VOC for the cleanup of tools and process equipment, such as spray equipment, unless equipment is used to collect the cleaning compounds and to reasonably minimize VOC evaporation to the atmosphere.

#### Recordkeeping

#### **TABLE 4.0.3**

Condition No.	Requirement	Citation
1	Records retention	Shelby County Air Code Section 3-5, Reference Rules and Regulations of Tennessee, Rule 1200-3-902(11)(e)1(iii)(II)II

#### Recordkeeping:

1. Records and supporting information required to be maintained by this permit shall be retained for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

#### **<u>Reporting Requirements</u>**

Condition No.	Description	Frequency	Citation	
1	Monitoring report	Semiannually	Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9- .02(11)(e)1.(iii)(I)]	
2	Compliance Certification	Annually	Shelby County Air Code Section 3-5, [Reference Rules and Regulations of Tennessee, Rule 1200-3-9- .02(11)(e)3.(v)]	
Local Only Condition(s)				
3	Emissions Report	Annually	Shelby County Air Code Section 14.5-30 and Shelby County Air Code Section 3-22 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1802(8)]	

#### **TABLE 4.0.4**

#### Reporting Requirements:

1. The facility owner or operator shall submit, semiannually, a monitoring report consistent with the requirements of Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)1.(iii)(I)]. This report shall include all deviations from permit requirements. Each report shall be certified by the responsible official consistent with the requirements of Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(d)4]. These reports should also include a demonstration of compliance with facility-wide emission limits.

The reporting periods for these reports are January 1 through June 30 and July 1 through December 31, every calendar year. These reports shall be due within 60 days of the end of each reporting period.

- 2. The responsible official shall certify compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices in accordance with Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)3(v)]. Specifically, the compliance certification shall include the following:
  - a) The identification of each term or condition of the permit that is the basis of the certification;
  - b) The identification of the method(s) or other means used by the facility owner or operator for determining the compliance status with each term, condition, and emission limitation and standards and work practices during the certification period consistent with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)1(iii)];

Reporting Requirements (Continued):

- c) The status of compliance with the terms and conditions of the permit for the period covered by the certification. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify, as possible exceptions to compliance, any periods during which compliance is required in which an excursion or exceedance as defined under Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(b)(30-31)] occurred;
- d) Whether compliance was continuous or intermittent;
- e) Such other facts as the permitting authority may require to determine the compliance status of the source; and
- f) A certification that based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

This certification shall be submitted to the Department and to the USEPA at the following addresses:

Technical Manager Shelby County Health Department Pollution Control Section 1826 Sycamore View Road Memphis, Tennessee 38134

Enforcement and Compliance Assurance Division US EPA Region 4 61 Forsyth Street, S.W. Atlanta, Georgia 30303

Annual certifications for the consecutive 12-month rolling period from January 1 – December 31, each year, shall be submitted within 60 calendar days of the end of the reporting period.

Local Only Condition(s):

3. The facility owner or operator shall submit a report to the Department, on an annual basis, that establishes the amount of actual emissions of each regulated pollutant, including carbon monoxide (CO), volatile organic compounds (VOCs), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>) and particulate matter (PM) for the facility according to the provisions in Shelby County Air Code. The schedule for the submission of this annual emission report shall be February 28 every year, for the preceding calendar year, unless otherwise specified by the Department.

#### SOURCE SPECIFIC REQUIREMENTS

#### Emission Unit 1 (EU1) (Aminonitriles (AN) Process)

#### **Emission Limits and Restrictions**

#### **TABLE 4.1.1**

Condition No.	Pollutant (Parameter)	Limitation	Cite	
1	PM/PM <sub>10</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> , VOC	12-month rolling emission limits for the AN Process (Flare) (Emission Source A01)		
2	VOC	AN Process operating restrictions		
3	VOC	Flare destruction efficiency to meet Table 4.1.2 emission limits	Permit application (source request) and/or Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-902(11)(e)1(i)]	
4	VOC	Flare operational requirements to meet Table 4.1.2 emission limits		
5	VOC	Emission limits for Ketones Storage Tanks (Emission Source A02)		
6	VOC	Ketone storage tank operating restriction		
		40 CFR Part 63, Subpart FFFF Requiren	nents	
7	НАР	Process equipment leak requirements	<ul> <li>§63.2450 (Reference subpart Table 6) and</li> <li>40 CFR Part 63, subpart UU [§§63.1025 - 63.1027]</li> </ul>	
8	НАР	Pressure relief device pressure relief management requirements	\$63.2480(e)(3)	
9	НАР	Process wastewater and liquid stream requirements	40 CFR Part 63, Subpart G, §63.138(h) (1, 2 or 3) as referenced by 40 CFR 63, Subpart FFFF, §63.2485(i)	
10	HAP	Heat exchange system requirements	§63.2490(d)	
11	HAP	Any unreferenced applicable requirements within 40 CFR Part 63, subpart FFFF	40 CFR Part 63, subpart FFFF	

**Emission Limits and Restrictions:** 

1. The facility owner or operator shall limit consecutive 12-month rolling period emissions from the AN Process (Emission Source A01) (Emission Point Number (EPN) 001 - Flare) as follows:

<b>Pollutant</b> <sup>1</sup>	Tons/12-months			
PM/PM <sub>10</sub>	0.1			
SO <sub>2</sub>	0.1			
NO <sub>x</sub>	1.4			
СО	2.0			
VOC	0.1			

TABLE	4.1	.2
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<sup>1</sup> PM /PM<sub>10</sub> = Particulate Matter/PM with an aerodynamic diameter less than or equal to 10 micrometers, SO<sub>2</sub> = Sulfur Dioxide, NO<sub>x</sub> = Nitrogen Oxides, CO = Carbon Monoxide, VOC, Volatile Organic Compounds

Emission Limits and Restrictions (Continued):

- 2. The facility owner or operator shall restrict the AN Process (Emission Source A01) as follows:
  - a) The maximum total number of batches of aminonitriles shall not exceed 780 batches per consecutive 12-month rolling period;
  - b) The monthly average<sup>1</sup> maximum reactant feed rate to the AN Process Reactor during any month shall not exceed 12,300 pounds per batch;

<sup>1</sup> Monthly average within this condition shall mean the total reactants fed to the reactor in any calendar month divided by the number of batches reacted in that month.

- c) The maximum amount of natural gas fed to the flare shall not exceed 4.4 million standard cubic feet (MMscf) per consecutive 12-month rolling period; and
- d) The maximum process off-gas (excluding natural gas and nitrogen blanket) fed to the flare (EPN-001) shall not exceed 7.84 MMscf per consecutive 12-month rolling period.
- 3. The VOC destruction efficiency of the AN Process Flare (EPN-001) shall be greater than or equal to 98%.
- 4. The facility owner or operator shall operate the AN Process Flare (EPN-001) in accordance with the following:
  - a) The flare shall be operated at all times when emissions are vented to the flare;
  - b) The flare shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours (Reference EPA Method 22);
  - c) The flare shall be operated with a flame present at all times;
  - d) The flare shall be equipped with a continuous burning pilot, a thermocouple (or equivalent system) for monitoring the presence of the pilot flame and a system to signal the operator of the absence of the pilot flame;
  - e) The process vents to the flare shall be closed if the pilot flame is not present
- 5. The facility owner or operator shall limit VOC emissions from the Ketones Storage Tanks (EPN-055 and 056) (Emission Source A02) to 7.6 tons per consecutive 12-month rolling period.

#### Emission Limits and Restrictions (Continued):

6. The facility owner or operator shall limit the maximum number of Ketone Storage Tank turnovers (annual quantity of ketones loaded divided by tank working capacity of 7,300 gallons) to 114 turnovers per consecutive 12-month rolling period for both tanks combined.

#### 40 CFR Part 63, subpart FFFF requirements

- 7. The facility owner or operator in accordance with §63.2450 (Reference subpart Table 6) shall comply with 40 CFR Part 63, subpart UU and the requirements referenced therein, except as specified in §63.2480(b) and (d) through (f) for AN Process equipment leaks.
- 8. The facility owner or operator shall comply with the following pressure release management requirements within §63.2480(e)(3) for the pressure relief devices in organic HAP service listed in the table below.

Pressure relief Device Tag	Description
EV0004	AN Product Storage Tank #1 Emergency Vent
EV0005	AN Product Storage Tank #2 Emergency Vent
EV0006 AN Product Storage Tank #3 Emergency V	
RV-00359	Reactor Relief Valve

**TABLE 4.1.3** 

- (i) Equip each affected pressure relief device with a device(s) or use a monitoring system that is capable of:
  - (A) Identifying the pressure release;
  - (B) Recording the time and duration of each pressure release; and
  - (C) Notifying operators immediately that a pressure release is occurring. The device or monitoring system must be either specific to the pressure relief device itself or must be associated with the process system or piping, sufficient to indicate a pressure release to the atmosphere. Examples of these types of devices and systems include, but are not limited to, a rupture disk indicator, magnetic sensor, motion detector on the pressure relief valve stem, flow monitor, or pressure monitor.
- (ii) Apply at least three redundant prevention measures to each affected pressure relief device and document these measures as follows:

#### Emission Limits and Restrictions (Continued):

Pressure	Description	Set	Prevention Measures and Monitoring		toring
Relief Device Tag		Pressure	Measure 1	Measure 2	Measure 3
EV0004	AN Product Storage Tank #1 Emergency Vent	12 psig	N2 PAD pressure indicator control with		
EV0005	AN Product Storage Tank #2 Emergency Vent	12 psig DCS based alarm. (Alarm setting at			
EV0006	AN Product Storage Tank #3 Emergency Vent	12 psig	DCS action at 8 psig. (DCS closes N2 valve to product tanks and opens valve to flare)	Deluge System	PRD
RV-00359	Reactor Relief Valve	150 psig	Reactor pressure indicator with DCS based alarm. (Alarm setting at 60 psig)	actuation in the event of a fire	Maintenance Program
			70 psig (Interlock at close all feed valves and DCS will open valve to flare)		

**TABLE 4.1.4** 

(iii) If any affected pressure relief device releases to atmosphere as a result of a pressure release event, the facility owner or operator must perform root cause analysis and corrective action analysis according to \$63.2480(e)(6) and implement corrective actions according to the requirements in \$63.2480(e)(7).

The facility owner or operator must also calculate the quantity of organic HAP released during each pressure release event and report this quantity as required in §63.2520(e)(15). Calculations may be based on data from the pressure relief device monitoring alone or in combination with process parameter monitoring data and process knowledge.

- (iv) The facility owner or operator must determine the total number of release events that occurred during the calendar year for each affected pressure relief device separately.
- (v) Except for pressure relief devices described in §63.2480(e)(4) and (5), the following release events from an affected pressure relief device are a deviation of the pressure release management work practice standards.
  - (A) Any release event for which the root cause of the event was determined to be operator error or poor maintenance.

#### Emission Limits and Restrictions (Continued):

- (B) A second release event from a single pressure relief device in a 3 calendar year period for the same root cause for the same equipment.
- (C) A third release event from a single pressure relief device in a 3 calendar year period for any reason.

Added January 29, 2025

9. The facility owner or operator will dispose of the material in Table 4.1.3 in accordance with §63.138(h)(1, 2 or 3) (Treatment in a RCRA unit option) as referenced by 63.2485(i)

Wastewater Stream ID	Group Type		
Tanker truck washing	1		
Washing out after campaign	1		
AN-52 decant water	1		

**TABLE 4.1.5** 

(Amended January 29, 2025)

10. The facility owner or operator shall comply with the quarterly monitoring requirements of §63.2490(d) for the AN Process heat exchange systems listed in the table below to identify leaks<sup>1</sup>.

<sup>1</sup> With the 2024 revisions to the MON, non-exempt heat exchangers must now comply with §63.2490(d), in lieu of the requirements of §63.104, requiring the implementation of the Modified El Paso Monitoring Method for systems with a recirculating flow rate of 10 gallons per minute (gpm) or more. Samples must be taken at selected heat exchanger exit lines (outlet or discharge) as required by §63.2490(d)(1)(i), and a leak action level is defined as 6.2 ppmv of total strippable hydrocarbon concentration (as methane) per §63.2490(d)(1)(iv).

Equipment ID	Heat Exchange System	Recirculating	Monitoring location as
	Description	Flow Rate	prescribed by §63.2490(d)(1)(i)
Tech ID: 10-4 SAP #: 50000004	AN Reactor Cooler (Closed-Loop Recirculation Shell and Tube Heat Exchanger)	>10,000 gpm	Bleed vent on the return line from heat exchange (ANT07100)

(Amended January 29, 2025)

11. The facility owner or operator is subject to and shall comply with any applicable requirements of 40 CFR Part 63, subpart FFFF for the AN Process that are not specifically referenced in this permit.

#### **Monitoring and Recordkeeping Requirements**

Condition No.	Description	Frequency	Cite		
1	AN Process throughput and emission calculations	Monthly			
2	Flare operating and maintenance records	Various			
3	Pilot flame and/or thermocouple monitoring system malfunction procedures         Hourly         Shelby County Air Code Sectio [Reference Rules and Regulatic		Shelby County Air Code Section 3-7 [Reference Rules and Regulations of		
4	Flare visual observations	Annual	Tennessee, Rule 1200-3-1004(2)]		
5	Ketone Storage Tank throughput, capacity and emission calculations	Monthly			
40 CFR Part 63, subpart FFFF Requirements					
6	NESHAP recordkeeping requirements	As required by regulation	§ 63.2525		

#### **TABLE 4.1.7**

Monitoring and Recordkeeping Requirements:

- 1. The facility owner or operator shall maintain the following production and emission calculations for the AN Process:
  - a) Monthly and consecutive 12-month rolling period number of batches of aminonitriles produced;
  - b) Monthly average reactant feed rate to the AN Process;
  - c) Monthly and consecutive 12-month rolling period process off-gas (excluding natural gas and nitrogen blanket) fed to the flare.
  - d) Monthly and consecutive 12-month rolling period amount of natural gas fed to the flare; and
  - e) Monthly and consecutive 12-month rolling period AN Process emissions and associated calculations.
- 2. The facility owner or operator shall maintain the following operating and maintenance records for the AN Process Flare:
  - a) Logs or records indicating the presence of a flame;
  - b) Hourly visual confirmation records of flare pilot flame presence during periods of pilot flame and/or thermocouple monitoring system malfunction; (*Amended January 29, 2025*)
  - c) Logs or records of flare downtime and excess emissions;

Monitoring and Recordkeeping Requirements (Continued):

- d) Flare maintenance and inspection records to assure that it is operating and maintained in conformance with flare design;
- e) Monthly records of the composition of the gas stream burned in the flare and calculations of monthly average heat input to the flare; and
- f) Monthly records of the flare exit velocity and associated calculations.
- 3. In the event the pilot flame and/or thermocouple monitoring system malfunction during operation, hourly visual confirmation of the presence of a flame shall be conducted and recorded until repair can be made.
- 4. The facility owner or operator shall perform and record annual visual observations of the flare during normal operation using EPA Method 22.
- 5. The facility owner or operator shall maintain the following records for the Ketone Storage Tanks:
  - a) Monthly and consecutive 12-month rolling period combined Ketone Storage Tank turnovers (annual quantity of ketones loaded divided by tank working capacity of 7,300 gallons);
  - b) Records documenting the dimensions and working capacity of the tanks; and
  - c) Monthly and consecutive 12-month rolling period Ketone Storage Tank emissions and associated calculations.

#### 40 CFR Part 63, subpart FFFF requirements

6. The facility owner or operator shall maintain records in accordance with the requirements of § 63.2525.

#### **Reporting Requirements**

#### **TABLE 4.1.8**

Condition No.	Description	Reporting Frequency	Cite	
1	Compliance monitoring reports	Semiannual	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]	
40 CFR Part 63, subpart FFFF requirements				
2	NESHAP reporting requirements	Semiannual	§ 63.2520	

#### Reporting Requirements:

1. The facility owner or operator shall submit the following records to the Department, on a semiannual basis, for the previous consecutive 12-month rolling period. These records shall be submitted with the semiannual monitoring report required under Section IV, Facility-Wide Requirements, Reporting Requirements, Condition No. 1.

#### AN Process

- a) Monthly and consecutive 12-month rolling period number of batches of aminonitriles produced;
- b) Monthly average reactant feed rate to the AN Process;
- c) Monthly and consecutive 12-month rolling period process off-gas (excluding natural gas and nitrogen blanket) fed to the flare;
- d) Monthly and consecutive 12-month rolling period amount of natural gas fed to the flare;
- e) Monthly and consecutive 12-month rolling period AN Process emissions;

#### Flare

- g) Logs or records of flare downtime and excess emissions;
- h) Annual flare observation records (EPA Method 22).

Reporting Requirements (Continued):

#### Ketone Storage Tanks

- i) Monthly and consecutive 12-month rolling period combined Ketone Storage Tank turnovers; and
- j) Monthly and consecutive 12-month rolling period Ketone Storage Tank emissions.

#### 40 CFR Part 63, subpart FFFF requirements

2. The facility owner or operator shall submit semiannual compliance reports in accordance with § 63.2520 (Reference Subpart Table 11) of the subpart.

#### Emission Unit 2 (EU2) (Hydrogen Cyanide (HCN) Process)

#### **Emission Limits and Restrictions**

#### **TABLE 4.2.1**

Condition No.	Pollutant (Parameter)	Limitation	Cite			
	Emission Source C01					
1	PM/PM <sub>10</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> , VOC	Hourly emission limits	PSD avoidance and Shelby County Air Code Section 3-5 [Reference Rules and			
2	PM/PM <sub>10</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> , VOC	12-month rolling emission limits	Regulations of Tennessee, Rule 1200-3-9- .02(11)(e)1(i)]			
3	VOC	Combined fugitive and stack 12-month rolling period VOC emission limits	Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-902(11)(e)1(i)]			
		40 CFR Part 63, subpart YY requirement	nts			
4	HAP	Compliance with standards and operation and maintenance requirements	§63.1108(a)(4,6 and 7)			
5	HAP	Leak detection and repair (LDAR)	40 CFR Part 63, subpart TT, §63.1103(g) (Reference subpart Table 9) and §63.1107			
6	HAP	Any unreferenced applicable requirements within 40 CFR Part 63, subpart YY	40 CFR Part 63, subpart YY			
		Startup Flare (EPN-101)				
7	CO and NO <sub>x</sub>	Maximum gas flow to a converter during pre-ignition				
8	CO and NO <sub>x</sub>	Maximum startup events per 12-month rolling period				
9	CO and NO <sub>x</sub>	Maximum number of events of flaring of converters for maintenance per 12-month rolling period	PSD avoidance			
10	CO and NO <sub>x</sub>	Maximum number of events of de-inventorying of the NH <sub>3</sub> pipeline and supply system per 12- month rolling period				
11	PM/PM <sub>10</sub>	Non-process particulate matter emission standard	Shelby County Air Code Section 3-21 [Reference Rules and Regulations of Tennessee, Rule 1200-3-602(2)]			
12	VOC	Flare operation, design and destruction efficiency requirements	Shelby County Air Code Section 3-22 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1840(3)(a-b)]			
40 CFR Part 63, subpart YY requirements						
13	НАР	Process vent control requirements	<pre>\$63.1103(g) (Reference subpart Table 9, item (b)(ii)), \$63.982(b), \$63.983, \$63.987, and \$63.997(a-c)</pre>			
14	НАР	Flare operation and design requirements	§63.1103(g) (Reference subpart Table 9) and §63.11(b) and Shelby County Air Code Section 3-22 [Reference Rules and Regulations of Tennessee, Rule 1200-3-18- .40(4)(b)]			

Run Flare (EPN-102)				
15	CO and NO <sub>x</sub>	Maximum annual offgas fed to the flare		
16	CO and NO <sub>x</sub>	Maximum rate of offgas in standard cubic feet per minute (scfm) vented to the run flare	PSD avoidance	
17	PM/PM <sub>10</sub>	Non-process particulate matter emission standard	Shelby County Air Code Section 3-21 [Reference Rules and Regulations of Tennessee, Rule 1200-3-602(2)]	
18	VOC	Flare operation, design and destruction efficiency requirements	Shelby County Air Code Section 3-22 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1840(3)(a-b)]	
		40 CFR Part 63, subpart YY requirement	nts	
19	НАР	Process vent control requirements	<pre>\$63.1103(g) (Reference subpart Table 9, item (b)(ii)), \$63.982(b), \$63.983, \$63.987, and \$63.997(a-c)</pre>	
20	НАР	Flare operation and design requirements	<ul> <li>§63.1103(g) (Reference subpart Table 9),</li> <li>§63.11(b) and Shelby County Air Code Section 3-22 [Reference Rules and Regulations of Tennessee, Rule 1200-3- 1840(4)(b)]</li> </ul>	
		Process Heaters (EPN-103, 104 and 10	05)	
21	PM/PM <sub>10</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> , VOC	Process heater maximum nominal heat ratings	Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-902(11)(e)1(i)]	
22	PM/PM <sub>10</sub>	Non-process particulate emission standard	Shelby County Air Code Section 3-21 [Reference Rules and Regulations of Tennessee, Rule 1200-3-602(2)]	
23	CO and NO <sub>x</sub>	Maximum annual offgas burned in the three process heaters.		
24	PM/PM <sub>10</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> , VOC	Process heater operation requirements	PSD avoidance	
		40 CFR Part 63, subpart DDDDD require	ments	
25	НАР	Fuel type restriction	\$63.7575 (Definition) and subpart Table 3 (Item 1)	
26	HAP	Oxygen trim system requirement	§63.7540(a)(12)	
27	НАР	Process heater tune ups	§63.7500 (Reference subpart Table 3), §63.7515 and §63.7540	
28	HAP	Energy assessment	§63.7500	
29	HAP	Work practice standards	§63.7500	
	I	Tank Farm Flare (EPN-108)	I	
30	CO and NO <sub>x</sub>	Limit on minimum boost gas feed rate to the flare		
31	CO and NO <sub>x</sub>	Limit on annual operating hours of the flare	PSD avoidance	
32	CO and NO <sub>x</sub>	Limit on annual hours of purging customer supply line when being vented to the flare		
33	PM/PM <sub>10</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> , VOC	12-month rolling emission limits	PSD avoidance and Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9- .02(11)(e)1(i)]	
34	PM/PM <sub>10</sub>	Non-process particulate matter emission standard	Shelby County Air Code Section 3-21 [Reference Rules and Regulations of Tennessee, Rule 1200-3-602(2)]	
35	VOC	Flare operation, design and destruction efficiency requirements	Shelby County Air Code Section 3-22 [Reference Rules and Regulations of Tennessee, Rule 1200-3-18-40(3)(a-b)]	

40 CFR Part 63, subpart YY requirements				
36	НАР	Process vent control requirements	<pre>§63.1103(g) (Reference subpart Table 9 item (a)(i)), §63.982(b), §63.983, §63.987 and §63.997(a-c)</pre>	
37	НАР	Flare operation and design requirements	§63.1103(g) (Reference subpart Table 9) and §63.11(b) and Shelby County Air Code Section 3-22 [Reference Rules and Regulations of Tennessee, Rule 1200-3- 1840(4)(b)]	
		Tank Farm Vent Scrubber (EPN-10	9)	
38	CO, NO <sub>x</sub> , SO <sub>2</sub> , VOC	12-month rolling emission limits	PSD avoidance and Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9- .02(11)(e)1(i)]	
39	VOC (HCN)	Limit on maximum amount of nitrogen purged to the HCN storage tank.	Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-902(11)(e)1(i)]	
		40 CFR Part 63, subpart YY requirement	nts	
40	НАР	Process vent control requirements (98% control efficiency)	<pre>\$63.1103(g) (Reference subpart Table 9, item (a)(ii)), \$63.982(c and d), \$63.983, \$63.985, \$63.990 and \$63.996</pre>	
41	HAP	Bypass requirement	§63.983(a)(3)(ii)	
42	НАР	Alternative operating parameter monitoring	Alternate requirements to §63.990(c)(1) and §63.996(b)(1) and (d)(2) as approved by EPA via letter dated October 7, 2005	
40 CFR Part 63, subpart YY requirements				
43	НАР	Process wastewater requirements (Concentration of 40 CFR Part 63, subpart G (Table 9) compounds)	§63.1103(g)(Table 9), §63.1106 and §63.132	
44	HAP	Maintenance wastewater requirements	§63.1106(b) and §63.105 (b-d)	

**Emission Limits and Restrictions:** 

#### **Emission Source C01**

1. The facility owner or operator shall limit hourly emissions (monthly average - pounds per hour (lbs/hr)) from the HCN Process (Emission Source C01) as follows:

TABLE 4	4.2.2

Emission	Source	Pollutant (lbs/hr)				
Point	Description	PM/PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	СО	VOC
101	Start-up (Air Assist Flare)	2.8	0.8	64.4	109.0	38.1
102	Run Flare	4.2	1.2	113.5	152.2	61.9
103						
104	Fuel Burning Installations	0.46	0.12	44.2	0.15	0.04
105	(110ccss fieaters)					

Emission Limits and Restrictions (continued):

2. The facility owner or operator shall limit consecutive 12-month rolling period emissions from the HCN Process (Emission Source C01) as follows:

Pollutant	Tons/12-months		
$PM/PM_{10}$	11.5		
$SO_2$	3.7		
NO <sub>x</sub>	374.2		
СО	274.1		
VOC	3.5		

**TABLE 4.2.3** 

3. The facility owner or operator shall limit total combined fugitive and stack VOC emissions from Emission Source C01 to 98 tons per consecutive 12-month rolling period.

#### 40 CFR Part 63, subpart YY requirements

- 4. The facility owner or operator shall comply with standards and operation and maintenance requirements as follows:
  - a) The emission limitations and established parameter ranges of this part shall apply at all times except during periods of non-operation of the affected source (or specific portion thereof) resulting in cessation of the emissions to which this subpart applies. Equipment leak requirements shall apply at all times except during periods of non-operation of the affected source (or specific portion thereof) in which the lines are drained and depressurized resulting in cessation of the emissions to which the equipment leak requirements apply;
  - b) Malfunctions shall be corrected as soon as practical after their occurrence; and
  - c) Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable, independent of emissions limitations or other requirements in relevant standards.
- 5. The facility owner or operator shall comply with the applicable leak detection and repair (LDAR) requirements for the HCN Process (Emission Source C01) within 40 CFR Part 63, subpart TT and §63.1107. All equipment that contains or contacts at least 5 percent by weight hydrogen cyanide and operates equal to or greater than 300 hours per year located in this process shall be subject to LDAR requirements.
- 6. The facility owner or operator is subject to and shall comply with applicable requirements of 40 CFR Part 63, subpart YY for the HCN Process that are not specifically referenced in this permit.

#### Emission Limits and Restrictions (continued):

#### **Startup Flare (EPN-101)**

- 7. Total gas flow to a converter during pre-ignition shall not exceed 9,240 standard cubic feet per minute (scfm) or the higher value from optional Equation 1 in Attachment C of this permit (if applicable).
- 8. The number of startup events shall not exceed 70 per consecutive 12-month rolling period or the higher value from optional Equations 2a or 2b in Attachment C of this permit (if applicable).
- 9. The number of events of flaring of converters for maintenance shall not exceed 2 per consecutive 12-month rolling period (each event shall occur for about 12 hours) or the higher value from optional Equations 3a or 3b in Attachment C of this permit (if applicable).
- 10. The number of events of de-inventorying of the NH<sub>3</sub> pipeline and supply system shall not exceed 2 per consecutive 12-month rolling period (each event shall occur for ~ 72 hours) or the higher value from optional Equations 4a or 4b in Attachment C of this permit (if applicable).
- 11. The maximum allowable particulate matter emissions for the startup flare shall not exceed 0.14 lb/MMBtu.
- 12. The facility owner or operator shall combust the VOC emissions in a flare that meets the following:
  - a) Reduce total VOC emissions by 98 weight percent or to 20 parts per million volumetric (ppmv) on a dry basis corrected to 3 percent oxygen, whichever is less stringent; and
  - b) The requirements of 40 CFR 60.18, except that, for a hydrogen fueled flare, the Technical Manager, upon demonstration that stable-flame conditions are maintained, may waive the net heating value and exit velocity requirements of this CFR section.

#### 40 CFR Part 63, subpart YY requirements

- 13. The facility owner or operator shall vent emissions from process vents during startup through a closed vent system to a flare meeting the requirements of 40 CFR Part 63, subpart SS, §63.982(b). §63.982(b) requires the facility to meet the requirements of §63.983 for closed vent systems, §63.987 for flares, and §63.997(a-c) for provisions regarding flare compliance assessments.
- 14. The Start-up Flare shall be operated and designed in accordance with §63.11(b) as follows:

Emission Limits and Restrictions (continued):

- a) The flare shall be steam-assisted, air-assisted, or non-assisted [§63.11(b)(2)];
- b) The flare shall be operated at all times when emissions are vented to the flare [§63.11(b)(3)];
- c) The flare shall be designed and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Test Method 22 in appendix A of part 60 of this chapter shall be used to determine the compliance of flares with the visible emission provisions of this part. The observation period is 2 hours and shall be used according to Method 22 [§63.11(b)(4)].

However, when the Start-up Flare is not used for periods long enough to allow a full observation period of 2 hours in accordance with Method 22, an annual Method 22 observation period less than 2 hours shall be allowed for the Start-up Flare.

- d) The flare shall be operated with a flame present at all times [§63.11(b)(5)];
- e) The flare shall be equipped with a continuous burning pilot, a thermocouple (or equivalent system) for monitoring the presence of the pilot flame and a system to signal the operator of the absence of the pilot flame;
- f) The process vents to the flare shall be closed if the pilot flame is not present; and
- g) The flare shall have a diameter of 3 inches or greater, be non-assisted, have a hydrogen content of 8.0 percent (by volume) or greater, and be designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity Vmax, as determined by the following equation [§63.11(b)(6)(i)]:

$$V^{max} = (X^{H2} - K^1) * K^2$$

Where:

 $V^{max} = Maximum permitted velocity, m/sec.$ 

Note: \$63.1103 (g)(4)(ii)(A) states that if the process vent is controlled using a flare in accordance with the provisions of \$63.987 for which a performance test has not been conducted, the control efficiency shall be assumed to be 98 weight-percent.

 $K^1$  = Constant, 6.0 volume-percent hydrogen.

 $K^2 = Constant, 3.9(m/sec)/volume-percent hydrogen.$ 

 $X^{H2}$  = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77. (Incorporated by reference as specified in § 63.14).

Emission Limits and Restrictions (continued):

#### Run Flare (EPN-102)

- 15. Total offgas fed to the Run Flare shall not exceed  $9.96 \ge 10^9$  scf per consecutive 12-month rolling period or the value calculated from optional Equation 5a in Attachment C of this permit (if applicable).
- 16. The maximum absorber offgas to the Run Flare shall not exceed 52,536 scfm or the value calculated from optional Equation 5b in Attachment C of this permit (if applicable).
- 17. The maximum allowable particulate matter emissions for the Run Flare shall not exceed 0.10 lb/MMBtu.
- 18. The facility owner or operator shall combust the VOC emissions in a flare that meets the following:
  - a) Reduce total VOC emissions by 98 weight percent or to 20 parts per million volumetric (ppmv) on a dry basis corrected to 3 percent oxygen, whichever is less stringent; and
  - b) The requirements of 40 CFR 60.18, except that, for a hydrogen fueled flare, the Technical Manager, upon demonstration that stable-flame conditions are maintained, may waive the net heating value and exit velocity requirements of this CFR section.

#### 40 CFR Part 63, subpart YY requirements

- 19. The facility owner or operator shall vent emissions from process vents through a closed vent system to a flare meeting the requirements of 40 CFR Part 63, subpart SS, §63.982(b). §63.982(b) requires the facility to meet the requirements of §63.983 for closed vent systems, §63.987 for flares, and §63.997(a-c) for provisions regarding flare compliance assessments.
- 20. The Run Flare shall be operated and designed in accordance with §63.11(b) as follows:
  - a) The flare shall be steam-assisted, air-assisted, or non-assisted [§63.11(b)(2)];
  - b) The flare shall be operated at all times when emissions are vented to the flare [§63.11(b)(3)];

Emission Limits and Restrictions (continued):

- c) The flare shall be designed and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Test Method 22 in appendix A of part 60 of this chapter shall be used to determine the compliance of flares with the visible emission provisions of this part. The observation period is 2 hours and shall be used according to Method 22 [§63.11(b)(4)];
- d) The flare shall be operated with a flame present at all times [§63.11(b)(5)];
- e) The flare shall be equipped with a continuous burning pilot, a ultra-violet sensor or thermocouple (or equivalent system) for monitoring the presence of the pilot flame and a system to signal the operator of the absence of the pilot flame;
- f) The process vents to the flare shall be closed if the pilot flame is not present; and
- g) The flare shall be used only with the net heating value of the gas being combusted at 11.2 MJ/scm (300 Btu/scf) or greater for the air-assisted flare; or with the net heating value of the gas being combusted at 7.45 MJ/scm (200 Btu/scf) or greater.

The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T\!=\!K\!\sum\nolimits_{i=1}^n c_i H_i$$

Where:

 $H^{T}$  = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

 $K = Constant = 1.740 \times 10^{-7} (1/ppm^{\circ})(g-mole/scm)(MJ/kcal)$ where the standard temperature for (g-mole/scm) is 20 °C.

 $C^{i}$  = Concentration of sample component i in ppmv on a wet basis, as measured for organics by Test Method 18 and measured for hydrogen and carbon monoxide by American Society for Testing and Materials (ASTM) D1946-77 or 90 (Reapproved 1994) (incorporated by reference as specified in § 63.14).

Hi = Net heat of combustion of sample component i, kcal/g-mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in § 63.14) if published values are not available or cannot be calculated. n = Number of sample components.

Note: \$63.1103 (g)(4)(ii)(A) states that if the process vent is controlled using a flare in accordance with the provisions of \$63.987 for which a performance test has not been conducted, the control efficiency shall be assumed to be 98 weight-percent.

#### Process Heaters (EPN-103, 104 and 105)

- 21. Process Preheaters (EPN-103, 104 and 105) shall have a nominal heat rating of no greater than 24 MMBtu/hr each.
- 22. The maximum allowable particulate matter emissions from each of the three process heaters shall not exceed 0.4781 lbs/MMBtu.

Emission Limits and Restrictions (continued):

23. The facility owner or operator shall limit the hourly flow rate (scfm) (24-hour average) and consecutive 12-month rolling period usage (scf) of HCN Absorber offgas as not to exceed the following:

Source	Scfm (24-hour average)	Scf (consecutive 12-month rolling)	
Process Preheaters (EPN-103, 104 and 105)	14,531	-	
Process Preheaters (EPN-103, 104 and 105) and 3 Boilers (EPN-501, and 502)	57,745	23.8 x 10 <sup>9</sup>	

**TABLE 4.2.4** 

- 24. The facility owner or operator shall demonstrate compliance with emission rates stated in permit applications by operating the Process Preheaters (EPN-103, 104 and 105) under conditions consistent with those from stack testing. These conditions are as follows:
  - a) Minimum wet gas residence time of 1.06 seconds based on the total heater volume; and
  - b) Minimum combustion zone temperature of 800 degrees centigrade (3-hour average)

Note: Process Preheaters (EPN-103, 104 and 105) combust natural gas and absorber off gas (AOG) as fuel. These process heaters are excluded from the standards of 40 CFR Part 63 Subpart YY. §63.1101 defines a process vent as the point of discharge to the atmosphere or point of entry into a control device of a gas stream from a unit operation within a source category subject to this subpart. The process vent definition excludes gas streams transferred for fuel value, use, reuse, or sale for fuel value use or reuse. These units are affected under 40 CFR Part 63, subpart DDDDD.

#### 40 CFR Part 63, subpart DDDDD requirements

- 25. Each Process Preheater (EPN-103, 104 and 105) shall be limited to the use of only natural gas or other Gas 1 Fuels as defined in §63.7575.
- 26. The facility owner or operator shall equip and operate each Process Preheater (EPN-103, 104 and 105) with a continuous oxygen trim system that maintains an optimum air to fuel ratio.
- 27. The facility owner or operator shall conduct a tune-up in accordance with §63.7500 (Reference subpart Table 3) of Process Preheaters (EPN-103, 104 and 105) every 5-years as specified in §63.7515 and §63.7540.
- 28. The facility owner or operator shall have a one-time energy assessment performed by a qualified energy assessor in accordance with §63.7500 (Reference subpart Table 3) on Process Preheaters (EPN-103, 104 and 105).

#### Emission Limits and Restrictions (continued):

29. The facility owner or operator must operate and maintain the Process Preheaters (EPN-103, 104 and 105), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

#### Tank Farm Flare (EPN-108)

- 30. The boost gas added to the Tank Farm Flare shall not be less than 30 standard cubic feet per minute (scfm).
- 31. Total annual operating hours of the Tank Farm Flare shall not be greater than 1,584 hours per consecutive 12-month rolling period.
- 32. Total annual hours of purging the customer supply line when being vented to the Tank Farm Flare shall not be greater than 8 hours per consecutive 12-month rolling period.
- 33. The facility owner or operator shall limit consecutive 12-month rolling period emissions from the Tank Farm Flare as follows:

Pollutant	Tons/12-months
$PM/PM_{10}$	0.1
$SO_2$	0.1
NO <sub>x</sub>	0.3
СО	1.9
VOC	0.5

**TABLE 4.2.5** 

- 34. The maximum allowable particulate matter emissions for the Tank Farm Flare shall not exceed 0.60 lb/MMBtu.
- 35. The facility owner or operator shall combust the VOC emissions in a flare that meets the following:
  - a) Reduce total VOC emissions by 98 weight percent or to 20 parts per million volumetric (ppmv) on a dry basis corrected to 3 percent oxygen, whichever is less stringent; and
  - b) The requirements of 40 CFR 60.18, except that, for a hydrogen fueled flare, the Technical Manager, upon demonstration that stable-flame conditions are maintained, may waive the net heating value and exit velocity requirements of this CFR section.

#### Emission Limits and Restrictions (continued):

#### 40 CFR Part 63, subpart YY requirements

- 36. When the Tank Farm Vent Scrubber (EPN-109) is not in operation the facility owner or operator shall vent emissions from the HCN storage tanks and vapor generated during product line purging through a closed vent system to a flare meeting the requirements of 40 CFR Part 63, subpart SS, §63.982(b). §63.982(b) requires the facility to meet the requirements of §63.983 for closed vent systems, §63.987 for flares, and §63.997(a-c) for provisions regarding flare compliance assessments.
- 37. The Tank Farm Flare shall be operated and designed in accordance with §63.11(b) as follows:
  - a) The flare shall be steam-assisted, air-assisted, or non-assisted [§63.11(b)(2)];
  - b) The flare shall be operated at all times when emissions are vented to the flare [§63.11(b)(3)];
  - c) The flare shall be designed and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Test Method 22 in appendix A of part 60 of this chapter shall be used to determine the compliance of flares with the visible emission provisions of this part. The observation period is 2 hours and shall be used according to Method 22 [§63.11(b)(4)];
  - d) The flare shall be operated with a flame present at all times [§63.11(b)(5)];
  - e) The flare shall be equipped with a continuous burning pilot, a thermocouple (or equivalent system) for monitoring the presence of the pilot flame and a system to signal the operator of the absence of the pilot flame;
  - f) The process vents to the flare shall be closed if the pilot flame is not present; and
  - g) The flare shall l be used only with the net heating value of the gas being combusted at 11.2 MJ/scm (300 Btu/scf) or greater for the air-assisted flare; or with the net heating value of the gas being combusted at 7.45 MJ/scm (200 Btu/scf) or greater.

The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T\!=\!K\!\sum\nolimits_{i=1}^n C_i H_i$$

Where:

 $H^{T} = N$ et heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C.

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#### Emission Limits and Restrictions (continued):

 $K = Constant = 1.740 \times 10^{-7} (1/ppm^{v})(g-mole/scm)(MJ/kcal)$ 

where the standard temperature for (g-mole/scm) is 20 °C.

 $C^{i}$  = Concentration of sample component i in ppmv on a wet basis, as measured for organics by Test Method 18 and measured for hydrogen and carbon monoxide by American Society for Testing and Materials (ASTM) D1946-77 or 90 (Reapproved 1994) (incorporated by reference as specified in § 63.14).

Hi = Net heat of combustion of sample component i, kcal/g-mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in § 63.14) if published values are not available or cannot be calculated.

n = Number of sample components.

Note: \$63.1103 (g)(4)(ii)(A) states that if the process vent is controlled using a flare in accordance with the provisions of \$63.987 for which a performance test has not been conducted, the control efficiency shall be assumed to be 98 weight-percent.

#### Tank Farm Vent Scrubber (EPN-109)

38. The facility owner or operator shall limit consecutive 12-month rolling period emissions from the Tank Farm Vent Scrubber as follows:

Pollutant Tons/12-months			
$SO_2$	0.1		
VOC	0.2		

**TABLE 4.2.6** 

39. The maximum amount of nitrogen purged to the HCN storage tanks' pump seals or packing, level probes, pressure switches and/or relief devices shall not exceed 470 standard cubic feet per hour (scfh), as measured by a rotameter or similar flow measurement device.

Note: This is in addition to the regulated Nitrogen used for maintaining fixed tank pressures.

#### 40 CFR Part 63, subpart YY requirements

- 40. The facility owner or operator shall reduce emissions of hydrogen cyanide by 98 weightpercent, or to a concentration of 20 parts per million by volume, by venting emissions through a closed vent system to any combination of control devices meeting the requirements of §63.982(c)(1) or (d).
- 41. The facility owner or operator shall secure the Vent Scrubber bypass valve that feeds the Tank Farm Flare in the non-diverting position with a car-seal or a lock-and-key type configuration.
- 42. The facility owner or operator shall use the following alternative criteria for scrubber monitoring:
  - a) Utilization of continuous water make-up;
  - b) Scrubber shall not utilize batch operation; and

Emission Limits and Restrictions (continued):

- c) Minimum scrubber make-up water flow rate shall be as follows:
  - i. The minimum make-up water flow rate to the scrubber shall not be less than 15 gallons per minute (gpm) during maximum operating conditions and not less than 7 gpm during normal operation, except for periods no greater than 15 minutes in any 24-hour period where water supply may be briefly reduced or interrupted;
  - ii. If water make-up becomes low and or cannot be re-instated on the scrubber after 15 minutes, the combined Tank Farm process vent shall be valved to the Tank Farm Flare; and
  - iii. When the annual fugitive VOC emission rate from the HCN process is greater than 68 tons per calendar year, the minimum water flow rates shall not be less than the value determined from Equations 6a, 6b and 6c of Attachment C.

#### 40 CFR Part 63, subpart YY requirements

43. The total annual average concentration of Table 9 compounds (Appendix of 40 CFR Part 63, Subpart G) in the wastewater streams from this process shall be less than 10,000 parts per million (ppm) by weight at all times and shall be less than 1,000 ppm by weight when the annual average flow rate is greater than or equal to 10 liters per minute.

*Note: This meets the definition of Group 2 wastewater streams within §63.1106(c).* 

44. The facility owner or operator shall prepare a description of maintenance procedures for management of maintenance wastewaters generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance-turnaround) and during periods which are not shutdowns (i.e., routine maintenance).

The descriptions shall:

- a) Specify the process equipment or maintenance tasks that are anticipated to create wastewater during maintenance activities.
- b) Specify the procedures that will be followed to properly manage the wastewater and control organic HAP emissions to the atmosphere; and
- c) Specify the procedures to be followed when clearing materials from process equipment.

Emission Limits and Restrictions (continued):

This information and these procedures shall:

- d) Be modified and updated as needed following each maintenance procedure based on the actions taken and the wastewaters generated in the preceding maintenance procedure.
- e) Be recorded and maintained as part of the start-up, shutdown, and malfunction plan required under 63.6(e)(3).

#### Monitoring and Recordkeeping Requirements

Condition No.	Description	Frequency	Cite		
Emission Source C01					
1	Visible emission observations	Annual	Shelby County Air Code Section 3-22 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1840(5)(g)] and §60.18(f)		
2	Emission calcultions	Monthly	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]		
3	Absorber off gas HCN concentration testing	Daily	PSD avoidance		
	40 CFR Part 63, subp	parts YY and SS re	equirements		
4	Leak detection and repair (LDAR)	See regulation	§63.1107 and 40 CFR Part 63, subpart TT		
5	Malfunction recordkeeping	See regulation	§63.1108(c)		
6	Closed vent system inspections	Annual	§63.983(b)(1)(i) or (ii)		
7	Actions to take when leaks are identified	See regulation	\$63.983(d)(1)		
8	Unsafe to inspect closed vent system inspection requirements	See regulation	§63.983(b)(2)		
9	Difficult to inspect closed vent system inspection requirements	See regulation	§63.983(b)(3)		
10	Repair of leaks	See regulation	§63.983(d)(2)		
11	Operation and maintenance of continuous parameter monitoring systems	See regulation	§63.996(c)		
12	Recordkeeping of leaks of closed vent systems	See regulation	\$63.998(d)(1)(iii) and (iv)		
13	General recordkeeping	See regulation	\$63.1109(a - d)		
14	Malfunction recordkeeping	As required	§63.1111(c)(1)		
	Startup 1	Flare (EPN-101)			
15	Event records	Various	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]		
16	Emission calculations	Monthly	Shelby County Air Code Section 3-7		
17	Flare visual observations	Annual	[Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]		
18	Flare monitoring requirements	Continuous	Shelby County Air Code Section 3-22 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1840(4)(b)]		
	40 CFR Part 63,	subpart YY requi	rements		
19	Flare flame and pilot flame monitoring records	Hourly	\$63.998(a)(1)(ii)		
20	Times and duration of all periods of flare flame or pilot flame absence	Each event	\$63.998(a)(1)(iii)(A)		

#### **TABLE 4.2.7**
Condition No.	Description	Frequency	Cite
21	Times and durations of periods when the flare flame/pilot flame monitor is not operating	Each event	§63.998(a)(1)(iii)(B)
22	Compliance assessment records	See regulation	§63.998(a)(1)(i)
	Run Fl	are (EPN-102)	
23	Operating hour and flow rate records	Various	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]
24	Emission calculations	Monthly	Shelby County Air Code Section 3-7
25	Flare visual observations	Annual	[Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]
26	Flare monitoring requirements	Continuous	Shelby County Air Code Section 3-22 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1840(4)(b)]
	40 CFR Part 63,	subpart YY requir	rements
27	Flare flame and pilot flame monitoring records	Hourly	§63.998(a)(1)(ii)
28	Times and duration of all periods of flare flame or pilot flame absence	Each event	§63.998(a)(1)(iii)(A)
29	Times and durations of periods when the flare flame/pilot flame monitor is not operating	Each event	§63.998(a)(1)(iii)(B)
30	Compliance assessment records	See regulation	§63.998(a)(1)(i)
	Process Heaters	(EPN-103, 104 a	nd 105)
31	Natural gas and other Gas 1 Fuels throughput records	Monthly	
32	Flow monitoring requirement	Continuous	Shelby County Air Code Section 3-7
33	Flow monitoring records	Hourly	[Reference Rules and Regulations of Tennessee,
34	Temperature monitoring requirement	Continuous	Rule 1200-3-1004(2)]
35	Temperature monitoring records	Continuous	
36	Nominal heat rating records	Continuous	
37	HCN Absorber offgas flow	Monthly	PSD avoidance
38	Emission calculations	Monthly	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]
	40 CFR Part 63, sub	ppart DDDDD red	quirements
39	NESHAP Recordkeeping	See regulation	§63.7560
	Tank Farn	n Flare (EPN-108	8)
40	Operating hour and flow rate records	Various	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee,
41			Rule 1200-3-1004(2)]
71	Emission calculations	Monthly	Rule 1200-3-1004(2)]       Shelby County Air Code Section 3-7
42	Emission calculations Flare visual observations	Monthly Annual	Rule 1200-3-1004(2)] Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]

Condition No.	Description	Frequency	Cite				
	40 CFR Part 63, subpart YY requirements						
44	Flare flame and pilot flame monitoring records	Hourly	§63.998(a)(1)(ii)				
45	Times and duration of all periods of flare flame or pilot flame absence	Each event	§63.998(a)(1)(iii)(A)				
46	Times and durations of periods when the flare flame/pilot flame monitor is not operating	Each event	§63.998(a)(1)(iii)(B)				
47	Compliance assessment records	See regulation	§63.998(a)(1)(i)				
	Tank Farm Ver	nt Scrubber (EPI	N-109)				
48	Operating and throughput records	Monthly	Shelby County Air Code Section 3-7				
49	Nitrogen purge rate measurements	Monthly	[Reference Rules and Regulations of Tennessee, Rule $1200-3-10-04(2)$ ]				
50	Emission calculations	Monthly	Rule 1200 5 10 .0+(2)]				
	40 CFR Part 63,	subpart YY requi	rements				
51	Bypass valve inspections	Monthly	§63.983(a)(3)(ii) and §63.998(d)(1)(ii)(B)				
52	Flow rate monitoring	Continuous	§63.990(c)(1) and §63.996(b)(1) and (d)(2)				
	W	astewater					
53	Group 2 process wastewater stream records	As required	§63.1106(a), §63.146 and §63.147				
54	Maintenance wastewater maintenance procedure records	As required	§63.1106(a) and §63.105				
55	Emission calculations	Monthly	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]				

Monitoring and Recordkeeping Requirements:

- 1. To demonstrate compliance with the visible emission requirements for the HCN process, the owner or operator shall make annual visual emission observations (opacity readings) of the flares when they are operated using EPA Method 22 and annual opacity readings of the process heaters using EPA Method 9. Records of readings shall be maintained on site.
- 2. The facility owner or operator shall calculate, record and maintain records of consecutive 12month rolling period emissions from the HCN Process (Emission Source C01).
- 3. The facility owner or operator shall test absorber off gas daily for HCN concentration (at least 75% of operating days per month) which shall be used to calculate NO<sub>x</sub> emissions.

## 40 CFR Part 63, subparts YY and SS requirements

4. The facility owner or operator shall comply with the applicable leak detection and repair (LDAR) monitoring and recordkeeping requirements for the HCN Process (Emission Source C01) within 40 CFR Part 63, subpart TT.

Monitoring and Recordkeeping Requirements (continued):

- 5. The facility owner or operator shall keep malfunction records as specified in §63.1111(c)(1)(I iii), as follows:
  - (i) In the event that an affected unit fails to meet an applicable standard, record the number of failures. For each failure record the date, time, and duration of each failure;
  - (ii) For each failure to meet an applicable standard, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions; and
  - (iii) Record actions taken to minimize emissions in accordance with § 63.1108(a)(4)(ii), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.
- 6. The facility owner or operator shall inspect each closed vent system in accordance with §63.983 (b)(1)(i) or (ii) as follows:
  - (i) If the closed vent system is constructed of hard-piping, the owner or operator shall conduct annual inspections for visible, audible, or olfactory indications of leaks; and
  - (ii) If the closed vent system is constructed of ductwork, the owner or operator shall conduct an initial and annual inspection according to the procedures in §63.983(c).
- 7. If there are visible, audible, or olfactory indications of leaks at the time of inspections, the facility owner or operator shall:
  - a) Eliminate the leak; or
  - b) Monitor the equipment according to EPA Method 21.
- 8. Any parts of the closed vent systems that are designated, as described in §63.998(d)(1)(i), as unsafe to inspect are exempt from the inspection requirements of §63.983(b)(1) if the conditions of §63.983(b)(2)(i and ii) are met as follows:
  - (i) The owner or operator determines that the equipment is unsafe-to-inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with §63.983(b)(1) of this section; and
  - (ii) The owner or operator has a written plan that requires inspection of the equipment as frequently as practical during safe-to-inspect times. Inspection is not required more than once annually.

#### Monitoring and Recordkeeping Requirements (continued):

- 9. Any parts of the closed vent systems that are designated, as described in §63.998(d)(1)(i), as difficult-to-inspect are exempt from the inspection requirements of §63.983(b)(1) if the conditions of §63.983(b)(3)(i and ii) are met as follows:
  - (i) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters (7 feet) above a support surface; and
  - (ii) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years.
- 10. Leaks of the closed vent system, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired by the facility owner or operator as soon as practical as follows:
  - a) A first attempt at repair shall be made no later than 5 days after the leak is detected.
  - b) Repairs shall be completed no later than 15 days after the leak is detected or at the beginning of the next introduction of vapors to the system, whichever is later.
  - c) Delay of repair of a closed vent system for which leaks have been detected is allowed if repair within 15 days after a leak is detected is technically infeasible or unsafe without a closed vent system shutdown (*Closed vent system shutdown* means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a closed vent system or part of a closed vent system consistent with safety constraints and during which repairs can be effected. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a closed vent system shutdown. An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the closed vent system or part of the closed vent system of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled closed vent system shutdown, is not a closed vent system shutdown.

The use of spare equipment and technically feasible bypassing of equipment without stopping production are not closed vent system shutdowns), or if the owner or operator determines that emissions resulting from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of such equipment shall be completed as soon as practical, but not later than the end of the next closed vent system shutdown.

#### Monitoring and Recordkeeping Requirements (continued):

- 11. The facility owner or operator shall perform operation and maintenance of continuous parameter monitoring systems as follows:
  - a) All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately;
  - b) The owner or operator of a regulated source shall maintain and operate each continuous parameter-monitoring system (CPMS) in a manner consistent with good air pollution control practices;
    - (i) The owner or operator of a regulated source shall ensure the immediate repair or replacement of CPMS parts to correct "routine" or otherwise predictable CPMS malfunctions. The necessary parts for routine repairs of the affected equipment shall be readily available.
  - c) All CPMS's shall be installed such that representative measurements of parameters from the regulated source are obtained; and
  - d) Except for system breakdowns, repairs, maintenance periods, instrument adjustments, or checks to maintain precision and accuracy, calibration checks, and zero and span adjustments, all continuous parameter-monitoring systems shall be in continuous operation when emissions are being routed to the monitored device.
- 12. For a closed vent system collecting regulated material from a regulated source, when a leak is detected, the following information shall be recorded and kept for 5 years. [40 CFR §63.998(d)(1)(iii) and (iv)]:
  - a) The instrument and the equipment identification number and the operator name, initials, or identification number;
  - b) The date the leak was detected and the date of the first attempt to repair the leak;
  - c) The date of successful repair of the leak;
  - d) The maximum instrument reading after the leak is successfully repaired or determined to be nonrepairable;
  - e) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 days after discovery of the leak.

### Monitoring and Recordkeeping Requirements (continued):

The facility owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure;

- f) Copies of the Periodic Reports, if records are not maintained on a computerized database capable of generating summary reports from the records; and
- g) For each instrumental or visual inspection conducted for closed vent systems collecting regulated material from a regulated source during which no leaks are detected, the owner or operator shall record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
- 13. The facility owner or operator shall maintain records in accordance with §63.1109 (a d).
- 14. The facility owner or operator shall keep the malfunction records specified in paragraphs (c)(1)(i) through (iii) of §63.1111 as follows:
  - a) In the event that an affected unit fails to meet an applicable standard, record the number of failures. For each failure record the date, time, and duration of each failure;
  - b) For each failure to meet an applicable standard, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions; and
  - c) Record actions taken to minimize emissions in accordance with § 63.1108(a)(4)(ii), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

### Startup Flare (EPN-101)

- 15. The facility owner or operator shall record and maintain the following event records for the Startup Flare (EPN-101):
  - a) Total gas flow (scfm) to a converter during pre-ignition;
  - b) Startup events per consecutive 12-month rolling period;
  - c) Number of events of flaring of converters for maintenance per consecutive 12-month rolling period;

### Monitoring and Recordkeeping Requirements (continued):

- d) Number of events of de-inventorying of the NH<sub>3</sub> pipeline and supply system per consecutive 12-month rolling period;
- e) Total hours of each NH<sub>3</sub> pipeline and supply system de-inventorying event; and
- *f*) Times and durations of flare flame or pilot flame outages during operation and startup events. (*Amended January 29, 2025*)
- 16. The facility owner or operator shall record and maintain monthly and consecutive 12-month rolling period flare emission calculations.
- 17. The facility owner or operator shall perform and record annual visual observations of the flare during normal operation using EPA Method 22.
- 18. The facility owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications or other written procedures, the following equipment on the flare: (*Amended January 29, 2025*)
  - a) A continuous burning pilot, an ultra-violet sensor or thermocouple (or equivalent system) for monitoring the presence of the pilot flame and a system to signal the operator of the absence of the pilot flame; and
  - b) A flow indicator that provides a record of vent stream flow to the flare at least once every hour for each air oxidation facility. The flow indicator shall be installed in the vent stream from each air oxidation facility at a point closest to the inlet of each flare and before being joined with any other vent stream.

## 40 CFR Part 63, subpart YY requirements

- 19. The facility owner or operator shall keep up to date and readily accessible hourly records of whether the flare flame/pilot flame monitor is continuously operating and whether the flare flame or at least one pilot flame is continuously present.
- 20. The facility owner or operator shall keep records of the times and duration of all periods during which the flare flame or all the pilot flames are absent. This record shall be submitted in the periodic reports as specified in §63.999(c)(3).
- 21. The facility owner or operator shall keep records of the times and durations of all periods during which the flare flame/pilot flame monitor is not operating.

### Monitoring and Recordkeeping Requirements (continued):

- 22. The facility owner or operator shall maintain flare compliance assessment records as specified in §63.998(a)(1), including the following:
  - a) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);
  - b) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the flare compliance assessment; and
  - c) All periods during the flare compliance assessment when all pilot flames are absent or, if only the flare flame is monitored, all periods when the flare flame is absent.

#### Run Flare (EPN-102)

- 23. The facility owner or operator shall record and maintain the following records for the Run Flare (EPN-102):
  - a) Daily operating hours;
  - b) Consecutive 12-month rolling period offgas fed to the flare (Updated monthly);
  - c) Absorber offgas flow rates (daily average scfm);
  - d) Number of occurrences of events of flaring all absorber offgas and flaring of absorber offgas through EP-75; and
  - e) Times and durations of flare flame or pilot flame outages. (Amended January 29, 2025)
- 24. The facility owner or operator shall record and maintain monthly and consecutive 12-month rolling period flare emission calculations.
- 25. The facility owner or operator shall perform and record annual visual observations of the flare during normal operation using EPA Method 22.
- 26. The facility owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications or other written procedures, the following monitoring equipment on the flare:
  - a) A continuous burning pilot, an ultra-violet sensor or thermocouple (or equivalent system) for monitoring the presence of the pilot flame and a system to signal the operator of the absence of the pilot flame; and
  - b) A flow indicator that provides a record of vent stream flow to the flare at least once every hour for each air oxidation facility. The flow indicator shall be installed in the vent stream from each air oxidation facility at a point closest to the inlet of each flare and before being joined with any other vent stream.

### Monitoring and Recordkeeping Requirements (continued):

### 40 CFR Part 63, subpart YY requirements

- 27. The facility owner or operator shall keep up to date and readily accessible hourly records of whether the flare flame/pilot flame monitor is continuously operating and whether the flare flame or at least one pilot flame is continuously present.
- 28. The facility owner or operator shall keep records of the times and duration of all periods during which the flare flame or all the pilot flames are absent. This record shall be submitted in the periodic reports as specified in §63.999(c)(3).
- 29. The facility owner or operator shall keep records of the times and durations of all periods during which the flare flame/pilot flame monitor is not operating.
- 30. The facility owner or operator shall maintain flare compliance assessment records as specified in §63.998(a)(1), including the following:
  - a) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);
  - b) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the flare compliance assessment; and
  - c) All periods during the flare compliance assessment when all pilot flames are absent or, if only the flare flame is monitored, all periods when the flare flame is absent.

### Process Heaters (EPN-103, 104 and 105)

- 31. The facility owner or operator shall maintain records of monthly natural gas and other Gas 1 Fuels throughput.
- 32. The facility owner or operator shall install, calibrate, maintain, and operate, according to manufacturer's specifications or other written procedures, a flow indicator that provides a continuous record of vent stream flow to the process heaters. The flow indicator shall be installed in the vent stream at a point close to the inlet of each process heater and before being joined with any other vent stream.
- 33. The facility owner or operator shall record and maintain hourly records of the vent stream flow rate.
- 34. The facility owner or operator shall install, calibrate, maintain, and operate, according to manufacturer's specification or other written procedures, a temperature monitoring device in the firebox of each process heater equipped with a continuous recorder and having an accuracy of  $\pm 1$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 0.5^{\circ}$ C, whichever is greater.

#### Monitoring and Recordkeeping Requirements (continued):

- 35. The facility owner or operator shall record and maintain the average combustion temperature of each process heater at least every 15 minutes (3-hours average).
- 36. The facility owner or operator shall maintain records of the nominal heat rating in MMBtu/hr for the Process Preheaters (EPN-103, 104 and 105).
- 37. The facility owner or operator shall maintain records of flow rates (scfm) (24-hour average and consecutive 12-month rolling period scf) of HCN Absorber offgas for the following groupings of equipment:
  - a) Process Preheaters (EPN-103, 104 and 105) (24-hour average scfm only); and
  - b) Process Preheaters (EPN-103, 104 and 105) and 3 Boilers (EPN-501, 502 and 503)
- 38. The facility owner or operator shall record and maintain monthly and consecutive 12-month rolling period emission calculations for the Process Preheaters (EPN-103, 104 and 105).

### 40 CFR Part 63, subpart DDDDD requirements

- 39. If you operate a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to subpart DDDDD, and you intend to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of this part, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in § 63.7575, you must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in § 63.7575. The notification must include the following information:
  - a) Company name and address;
  - b) Identification of the affected unit;
  - c) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began;
  - d) Type of alternative fuel that you intend to use; and
  - e) Dates when the alternative fuel use is expected to begin and end.

### Monitoring and Recordkeeping Requirements (continued):

### Tank Farm Flare (EPN-108)

- 40. The facility owner or operator shall record and maintain the following records for the Tank Farm Flare (EPN-108):
  - a) Daily operating hours;
  - b) Boost gas addition rate (scfm); and
  - c) Documentation of times and durations of flare flame or pilot flame outages. (Amended January 29, 2025)
- 41. The facility owner or operator shall record and maintain monthly and consecutive 12-month rolling period flare emission calculations.
- 42. The facility owner or operator shall perform and record annual visual observations of the flare during normal operation using EPA Method 22.
- 43. The facility owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications or other written procedures, a continuous burning pilot, an ultraviolet sensor or thermocouple (or equivalent system) for monitoring the presence of the pilot flame and a system to signal the operator of the absence of the pilot flame.

### 40 CFR Part 63, subpart YY requirements

- 44. The facility owner or operator shall keep up to date and readily accessible hourly records of whether the flare flame/pilot flame monitor is continuously operating and whether the flare flame or at least one pilot flame is continuously present.
- 45. The facility owner or operator shall keep records of the times and duration of all periods during which the flare flame or all the pilot flames are absent. This record shall be submitted in the periodic reports as specified in §63.999(c)(3).
- 46. The facility owner or operator shall keep records of the times and durations of all periods during which the flare flame/pilot flame monitor is not operating. (Note: Only applicable during periods where the vent stream is routed to the flare.)
- 47. The facility owner or operator shall maintain flare compliance assessment records as specified in §63.998(a)(1), including the following:
  - a) Flare design (i.e., steam-assisted, air-assisted, or non-assisted);

### Monitoring and Recordkeeping Requirements (continued):

- b) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the flare compliance assessment; and
- c) All periods during the flare compliance assessment when all pilot flames are absent or, if only the flare flame is monitored, all periods when the flare flame is absent.

## Tank Farm Vent Scrubber (EPN-109)

- 48. The facility owner or operator shall measure, record and maintain the following:
  - a) Operating hours;
  - b) Throughput rates of HCN to the storage tanks;
  - c) Maintenance and inspection records of the scrubber;
  - d) Records of monthly visual inspections of seals or closure mechanisms for the Vent Scrubber bypass valve; (*Amended January 29, 2025*)
  - e) Records of the occurrence of all periods when the bypass valve seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal (if used) that has been broken. (*Amended January 29, 2025*)
- 49. The facility owner or operator shall measure and record the nitrogen-purging rate to the HCN storage tanks' pump seals or packing, level probes, pressure switches and/or relief devices at least once per calendar month.
- 50. The facility owner or operator shall record and maintain monthly and consecutive 12-month rolling period scrubber emission calculations.

### 40 CFR Part 63, subpart YY requirements

- 51. The facility owner or operator shall perform and record monthly visual inspections of seals or closure mechanisms for the Vent Scrubber bypass valve and record the occurrence of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal (if used) that has been broken.
- 52. The facility owner or operator shall continuously monitor and record the flow of scrubbing liquid in the Tank Farm Vent Scrubber. The monitoring system must be equipped with an audible warning for conditions of low flow or no flow.

#### **Wastewater**

#### 40 CFR Part 63, subpart YY requirements

53. The facility owner or operator shall maintain the following records for all wastewater streams from this process to demonstrate compliance with Group 2 wastewater stream status:

#### EU2 HCN Process

Monitoring and Recordkeeping Requirements (continued):

- a) Process unit identification and description of the process unit;
- b) Stream identification code or name;
- c) Concentration of table 9 compound(s) in parts per million, by weight. Include documentation of the methodology used to determine concentration; and
- d) Total flow rate in liters per minute or gallons per minute.
- 54. The facility owner or operator shall maintain records demonstrating compliance with the maintenance procedures required within §63.105 for management of wastewaters generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance-turnaround) and during periods which are not shutdowns (i.e., routine maintenance).
- 55. The facility owner or operator shall record and maintain monthly and consecutive 12-month rolling period wastewater emission calculations.

### **Reporting Requirements**

#### **TABLE 4.2.8**

Condition	Description	Frequency	Cite
No.			
	Emissi	on Source C01	
1	Compliance monitoring reports	Semiannual	Shelby County Air Code Section 3-7
			[Reference Rules and Regulations of Tennessee,
			Rule 1200-3-1004(2)]
	40 CFR Part 63,	subpart YY requi	rements
2	NESHAP periodic reports	Semiannual	§63.1110(a) and §63.1110(e)
3	Bypass line reports	Semiannual	§63.1110(e)(6)
4	Reports of malfunctions	As required	§63.1111(c)(2)
5	LDAR updated lists of equipment counts	As required	§63.1018(a)(1)
	40 CFR Part 63, sub	ppart DDDDD red	quirements
6	Alternate fuel use notification	Per event	§63.7545(f)
7	Fuel switching notification	Per event	§63.7545(h)
8	Compliance reporting	5 years	§63.7550(c)
9	Deviation reporting	5 years	§63.7550(d)
10	Report submittal	5 years	§63.7550(h)(3)

Reporting Requirements:

#### **Emission Source C01**

- 1. The facility owner or operator shall submit the following records to the Department, on a semiannual basis, for the previous consecutive 12-month rolling period. These records shall be submitted with the semiannual monitoring report required under Section IV, Facility-Wide Requirements, Reporting Requirements, Condition No. 1.
  - a) Maximum hourly (monthly average) (lbs/hr) emissions during the reporting period from the following:

Emission Point	Source Description	Pollutant
101	Start-up (Air Assist Flare)	$PM/PM_{10}$ ,
102	Run Flare	CO
103		NO <sub>x</sub> SO <sub>2</sub>
104	Fuel Burning Installations (Process Heaters)	VOC
105	(1 locess fieaters)	

#### **TABLE 4.2.9**

b) Monthly and consecutive 12-month rolling period stack emissions (tons) of each regulated pollutant from the HCN Process (Emission Source C01);

Reporting Requirements (continued):

- c) Monthly and consecutive 12-month rolling period fugitive VOC emissions (tons) from Emission Source C01;
- d) Monthly and consecutive 12-month rolling period (average) absorber off gas HCN concentration;

### **Startup Flare (EPN-101)**

- e) Periods of total gas flow to a converter during pre-ignition exceeding the 9,240 standard cubic feet per minute (scfm) limit (Include flow rates);
- f) Consecutive 12-month rolling period total number of startup events;
- g) Consecutive 12-month rolling period number of events of flaring of converters for maintenance;
- h) Consecutive 12-month rolling period number of events of de-inventorying of the NH<sub>3</sub> pipeline and supply system;
- i) Visual emission observation records for the flare (Test Method 22);

### Run Flare (EPN-102)

- j) Monthly and consecutive 12-month rolling period offgas fed to the flare;
- k) Absorber offgas flow rates (scfm) to the flare above permit limitations;
- 1) Annual number of occurrences of events of flaring all absorber offgas and flaring of absorber offgas through EP-75;
- m) Absorber offgas flow rates (scfm) through EP-75 above permit limitations;
- n) Visual emission observation records for the flare (Test Method 22);

#### Reporting Requirements (continued):

### Process Heaters (EPN-103, 104 and 105)

- o) Records of flow rates (scfm) (24-hour average) of HCN Absorber offgas above permit limitations for the following groupings of equipment:
  - i. Process Heaters (EPN-103, 104 and 105); and
  - ii. Process Heaters (EPN-103, 104 and 105) and Boilers (EPN-501, 502 and 503)
- p) Records of consecutive 12-month rolling period flow rates (scfm) of HCN Absorber offgas to the following grouping of equipment:
  - i. Process Heaters (EPN-103, 104 and 105) and Boilers (EPN-501, 502 and 503)
- q) Process Heater (EPN-103, 104 and 105) tune up records;

### Tank Farm Flare (EPN-108)

- r) Annual operating hours:
- s) Annual hours of purging the customer supply line when being vented to the Tank Farm Flare;
- t) Records of boost gas addition rates (scfm) below permit limitations;
- u) Visual emission observation records for the flare (Test Method 22);
- v) Monthly and consecutive 12-month rolling period emissions;

### Tank Farm Vent Scrubber (EPN-109)

- w) Monthly and consecutive 12-month rolling period throughput rates of HCN to the storage tanks;
- Records of nitrogen-purging rate (scfh) to the HCN storage tanks' pump seals or packing, level probes, pressure switches and/or relief devices above permit limitations;
- y) Records of all periods when the make-up water flow rate to the scrubber is less than 15 gpm during maximum operating conditions and less than 7 gpm during normal operation;

### Reporting Requirements (continued):

- z) Records of all periods when water make-up becomes low and or cannot be re-instated on the scrubber after 15 minutes and documentation that the Tank Farm process vent is valved to the Tank Farm Flare;
- aa) Monthly and consecutive 12-month rolling period emissions;

### Wastewater

- bb) Wastewater stream identification code or name;
- cc) Concentration of table 9 compound(s) in parts per million, by weight for each wastewater stream and methodology used to determine concentration; and
- dd) Monthly and consecutive 12-month rolling period emissions.

## 40 CFR Part 63, subpart YY requirements

2. The facility owner or operator shall submit semi-annual Periodic Reports in accordance with §63.1110(a) (5) and §63.1110(e). The Periodic Report shall be submitted no later than 60 days after the end of each 6-month period. Information required by 40 CFR Part 60, subpart YY, which is submitted with a title V periodic report, need not also be included in the Periodic Report required by subpart YY or a subpart referenced by this subpart. The title V report shall be referenced in the Periodic Report required by this subpart.

The facility owner or operator may submit Periodic Reports on the same schedule as the title V periodic report for the facility.

- 3. For bypass lines subject to the requirements in §63.1103(e)(6), Periodic Reports must include the date, time, duration, estimate of the volume of gas, the concentration of organic HAP in the gas and the resulting mass emissions of organic HAP that bypass a control device. For periods when the flow indicator is not operating, report the date, time, and duration.
- 4. If the source fails to meet an applicable standard, report such events in the Periodic Report. Report the number of failures to meet an applicable standard. For each instance, report the date, time and duration of each failure. For each failure the report must include a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.
- 5. Upon addition of any equipment (valves, pumps, flanges, and etc.) that is subject to 40 CFR Part 63, Subpart TT, the owner or operator shall resubmit the initial periodic report according 40 CFR §63.1018(a)(1) that includes updated lists of equipment counts.

#### Reporting Requirements (continued):

#### 40 CFR Part 63, subpart DDDDD requirements

- 6. If you operate a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to subpart DDDDD, and you intend to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of this part, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in § 63.7575, you must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in § 63.7575. The notification must include the following information:
  - a) Company name and address;
  - b) Identification of the affected unit;
  - c) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began;
  - d) Type of alternative fuel that you intend to use; and
  - e) Dates when the alternative fuel use is expected to begin and end.
- 7. If you switch fuels or make a physical change to any boiler and the fuel switch or physical change results in the applicability of a different subcategory under Subpart DDDDD, you must provide notice of the date upon which you switched fuels or made the physical change within 30 days of the action. The notification must identify:
  - a) The name of the owner or operator of the affected source, as defined in §63.7490, the location of the source, the boiler(s) and process heater(s) that have switched fuels, were physically changed, and the date of the notice;
  - b) The currently applicable subcategory under this subpart; and
  - c) The date upon which the fuel switch or physical change occurred.
- 8. The facility owner or operator shall submit a compliance report for each affected combustion unit. These reports shall be submitted every 5-years and include the following information:
  - a) Company and facility name and address;
  - b) Process unit information, emissions limitations, and operating parameter limitations;

Reporting Requirements (continued):

- c) Date of report and beginning and ending dates of the reporting period;
- d) Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual, biennial, or 5-year tune-up according to § 63.7540(a)(10), (11), or (12) respectively. Include the date of the most recent burner inspection if it was not done annually, biennially, or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown;
- e) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report; and
- f) 5-year compliance reports must cover the applicable 5-year periods from January 1 to December 31 and are due by January 31;
- 9. For each deviation from work practice standards for periods of startup and shutdown, the compliance report must additionally contain the following information:
  - a) A description of the deviation and which emission limit, operating limit, or work practice standard from which you deviated; and
  - b) Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken.
- 10. The facility owner or operator must submit all reports required by Table 9 of this subpart electronically to the EPA via the CEDRI in accordance with §63.7550(h)(3).

# Emission Unit 3 (EU3) (Solid Cyanides Process)

# **Emission Limits and Restrictions**

#### **TABLE 4.3.1**

Condition No.	Pollutant (Parameter)	Limitation	Cite
1	PM/PM <sub>10</sub> , CO.	Consecutive 12-month period emission limits	PSD avoidance and Shelby County Air Code
2	NO <sub>x</sub> , SO <sub>2</sub> , VOC	Hourly emission limits	Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-902(11)(e)1(i)]
3	PM/PM <sub>10</sub>	Non-process particulate matter emission standard	Shelby County Air Code Section 3-21 [Reference Rules and Regulations of Tennessee, Rule 1200-3-602(2)]
4	PM/PM10	Process particulate matter emission standard	Shelby County Air Code Section 3-20 [Reference Rules and Regulations of Tennessee, Rule 1200-3-604(1)]
5	PM/PM <sub>10</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> , VOC	Process Heater maximum nominal heat rating	Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-902(11)(e)1(i)]
6	CO and NO <sub>x</sub>	Maximum annual quantity of Natural Gas burned in the Process Air Heater (EPN- 402)	
7	CO and NO <sub>x</sub>	Maximum air flow rate of the Process Air Vent (EPN-401)	DCD avoidance
8	CO and NO <sub>x</sub>	Maximum hours of operation of the Heater Air Vent (EPN-405)	PSD avoidance
9	CO and NO <sub>x</sub>	Maximum hours of exhaust operation of the Filter Vent (EPN-406)	
		40 CFR Part 63, subpart YY requir	rements
10	НАР	Leak detection and repair (LDAR)	40 CFR Part 63, subpart TT, §63.1103(g) (Reference subpart Table 9) and §63.1107
11	НАР	Any unreferenced applicable requirements within 40 CFR Part 63, subpart YY	40 CFR Part 63, subpart YY
12	HAP	Process vent control requirements (98% control efficiency) (Recycle, Demister and Dust & Fume Scrubbers)	<pre>\$63.1103(g) (Reference subpart Table 9, item (d)(ii)), \$63.982(c and d), \$63.983, \$63.985,</pre>
13	HAP	Limit on minimum water flow rates for the Recycle Scrubber (EPN-401)	Alternate requirements to \$63,990(c)(1) and
14	НАР	Limit on minimum water flow rates for the Demister Scrubber (EPN-401)	<pre>§63.996(b)(1) and (d)(2) as approved by EPA via letter dated October 7, 2005 and revised</pre>
15	НАР	Restrictions on operating parameters of Dust & Fume Scrubber (EPN-404)	October 30, 2013
		40 CFR Part 63, subpart DDDDD reg	quirements
16	НАР	Fuel type restriction	§63.7575 (Definition) and subpart Table 3 (Item 1)
17	HAP	Oxygen trim system requirement	§63.7540(a)(12)
18	HAP	Process heater tune ups	§63.7500 (Reference subpart Table 3), §63.7515 and §63.7540
19	HAP	Energy assessment	§63.7500
20	HAP	Work practice standards	§63.7500

Emission Limits and Restrictions (continued):

1. The facility owner or operator shall limit consecutive 12-month rolling period emissions from the Solid Cyanides Process as follows:

Emission	Emission	Descriptio	on and Controls		Pollutar	nt (Tons/12-	months)	
Group	Point			PM/PM <sub>10</sub>	СО	NO <sub>x</sub>	SO <sub>2</sub>	VOC
N01	402	Process Air Heater Combustion Vent	Oxygen Trim System	0.9	5.2	6.1	0.1	0.4
	401	Process Air Vent <sup>1</sup>		0.3				11.3 <sup>2</sup>
N03 (Dry End)	404	Dust & Fume Scrubber	The Dust & Fume Scrubber (EPN-404) was installed to prevent personnel exposure to dusts and fumes inside the process building.	1.0	Not applicable (NA)	NA	NA	17.6 <sup>2</sup>
	405	Heater Air Vent		0.1				0.12
	406	Fil	ter Vent	0.1				0.5 <sup>2</sup>
N02	407	Hot	well Vent	NLA	<b>N</b> T 4	NTA	NT A	0.12
(Wet End)	408	Feedwell Vent		NA	INA	INA	NA	$0.7^{2}$

<b>TABLE</b>	4.3.2
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<sup>1</sup> The Recycle/Demister Scrubbers act in series as one system for recycle and control of the process conveyance air. This is a closed loop system that exhausts excess air from the Process Air Vent.

<sup>2</sup> HCN included as a VOC.

2. The facility owner or operator shall limit hourly (monthly average) emissions from the Solid Cyanides Process as follows:

Emission Group	Emission Point	Description and Controls		PM/PM <sub>10</sub> (lbs/hr) (Monthly average)	VOC (lbs/hr) (Monthly average)
				<b>PM/PM</b> <sub>10</sub>	VOC
N01	402	Process Air Heater Combustion Vent		NA	0.1
	401	Process Air Vent <sup>1</sup>		0.1	11.3 <sup>2</sup>
N03 (Dry End)	404	Dust & Fume Scrubber	The Dust & Fume Scrubber (EPN-404) was installed to prevent personnel exposure to dusts and fumes inside the process building.	0.3	8.3 <sup>2</sup>
	405	Heater	Air Vent	0.1	$5.2^{2}$
	406	Filte	Filter Vent		5.6 <sup>2</sup>
N02	407	Hotw	ell Vent	NA	0.12
(Wet End)	408	Feedw	vell Vent	NA	$0.4^{2}$

**TABLE 4.3.3** 

<sup>1</sup> The Recycle/Demister Scrubbers act in series as one system for recycle and control of the process conveyance air. This is a closed loop system that exhausts excess air from the Process Air Vent.

<sup>2</sup> HCN included as a VOC.

Emission Limits and Restrictions (continued):

- 3. The maximum allowable particulate matter emissions from the Process Air Heater Combustion Vent (EPN-402) shall not exceed 0.49 lb/MMBtu.
- 4. The maximum concentration of cyanide salts in the exhaust from any stack within the Solid Cyanides Process shall not exceed 0.25 grains/dry standard cubic foot.

Note: By demonstrating compliance with the hourly  $PM/PM_{10}$  emission limit for this source the facility owner or operator shall be able to demonstrate compliance with this emission limit.

- 5. The Process Air Heater (EPN-402) shall have a nominal heat rating of no greater than 15 MMBtu/hr each.
- 6. The maximum quantity of natural gas burned in the Process Air Heater (EPN-402) shall not exceed  $122 \times 10^6$  cubic feet per consecutive 12-month rolling period.
- 7. The maximum air flow rate of the Process Air Vent (EPN-401) shall not exceed 7,000 scfm.
- 8. The maximum hours of operation of the Heater Air Vent (EPN-405) shall not exceed 200 hours per consecutive 12-month rolling period.
- 9. The maximum hours of exhaust operation of the Filter Vent (EPN-406) shall not exceed 600 hours per consecutive 12-month rolling period.

### 40 CFR Part 63, subpart YY requirements

10. The facility owner or operator shall comply with the applicable leak detection and repair (LDAR) requirements for the Solid Cyanides Process within 40 CFR Part 63, subpart TT and §63.1107.

All equipment that contains or contacts at least 5 percent by weight hydrogen cyanide and operates equal to or greater than 300 hours per year located in this process shall be subject to LDAR requirements.

11. The facility owner or operator is subject to and shall comply with any applicable requirements of 40 CFR Part 63, subpart YY for the Solid Cyanides Process that are not specifically referenced in this permit.

Emission Limits and Restrictions (continued):

- 12. The facility owner or operator shall reduce emissions of Sodium Cyanide and Potassium Cyanide from each dry-end process vent (EPN-401, EPN-404, EPN-405, and EPN-406) in the process unit by 98 weight-percent by venting emissions through a closed vent system to any combination of control devices (Recycle Scrubber and Demister Scrubber) meeting the requirements of §63.982(c)(2) or (d).
- 13. The facility owner or operator shall use the following alternative criteria for Recycle Scrubber monitoring:
  - a) The minimum make-up water flow rate for the Recycle Scrubber shall be greater than or equal to 4 gpm, except for short-term events where make-up water flow rate falls below the minimum flow rate or is lost, and, if not reinstated after 60 minutes, the scrubber liquor shall be sampled and analyzed every 30 minutes to assure solid cyanide concentrations remain below 23 wt.% in aqueous solution (12% free cyanide). If the concentration exceeds 23%, the Dry End process shall be shut down until water make-up can be re-established;
  - b) If the Recycle Scrubber make-up water flow rate falls below 4 gpm for greater than 4 hours, the Dry-End process shall be shut down;
  - c) The minimum recirculation flow rate for the Recycle Scrubber shall be greater than or equal to 90 gpm; and
  - d) If the Recycle Scrubber recirculation flow rate falls below 90 gpm for over 5 minutes, the Dry-End process shall be shut down.
- 14. The facility owner or operator shall use the following alternative criteria for Demister Scrubber monitoring:
  - a) The minimum total water flow rate (the combination of make-up water and recirculation water) for the Demister Scrubber shall be greater than or equal to 100 gpm; and
  - b) If the Demister Scrubber total water flow rate falls below 100 gpm for over 5 minutes, the Dry-End process shall be shut down.
- 15. The facility owner or operator shall use the following alternative criteria for Dust & Fume Scrubber monitoring:

Emission Limits and Restrictions (continued):

a) The minimum make-up water flow rate to the Dust & Fume Scrubber shall be greater than or equal to 1.6 gpm, except in for short-term events where fresh water make-up falls below 1.6 gpm or is lost, *and* if not reinstated after 60 minutes, the scrubber liquor shall be sampled and analyzed every 30 minutes to assure solid cyanide concentrations remain below 23 weight percent in aqueous solution (12% free cyanide).

If the concentration exceeds 23%, the dry-end process shall be shut down until water make-up can be re-established;

- b) If the Dust & Fume Scrubber make-up water flow rate falls below 1.6 gpm for greater than 4 hours, the Dry-End process shall be shut down;
- c) The minimum re-circulation flow rate for the Dust & Fume Scrubber spray nozzles shall be greater than or equal to 30 gpm, except for short-term events totaling less than or equal to1-hour in any 24-hr period;
- d) If the Dust & Fume Scrubber re-circulation flow rate falls below 30 gpm for greater than 1-hour in any 24-hr period, the Dry-End process shall be shut down; and
- e) If the Dust & Fume Scrubber blower ceases to operate and cannot be reinstated within 1-hour, the Dry End Process shall be shut down.

### 40 CFR Part 63, subpart DDDDD requirements

- 16. The Process Air Heater (EPN-402) shall be limited to the use of only natural gas as defined in §63.7575.
- 17. The facility owner or operator shall equip and operate the Process Air Heater (EPN-402) with a continuous oxygen trim system that maintains an optimum air to fuel ratio.
- 18. The facility owner or operator shall conduct a tune-up in accordance with §63.7500 (Reference subpart Table 3) of the Process Air Heater (EPN-402) every 5-years as specified in §63.7515 and §63.7540.
- 19. The facility owner or operator shall have a one-time energy assessment performed by a qualified energy assessor in accordance with §63.7500 (Reference subpart Table 3) on Process Air Heater (EPN-402).

#### Emission Limits and Restrictions (continued):

20. The facility owner or operator must operate and maintain the Process Air Heater (EPN-402), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance procedures, review of operation and maintenance procedures.

## **Monitoring and Recordkeeping Requirements**

Condition No.	Description	Frequency	Cite
1	Emission records	Monthly	
2	Process Air Vent air flow	Hourly	Shelby County Air Code Section 3-7
3	Process Air Heater gas usage and Heater Monthly [Reference Rule Air Vent and Filter Vent operating hours Rul		[Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]
4	Process heater nominal heat rating records	Continuous	
	40 CFR Part 63, subj	parts YY and SS re	equirements
5	Leak detection and repair (LDAR)	See regulation	§63.1107 and 40 CFR Part 63, subpart TT
6	Repair of leaks	See regulation	§63.983(d)(2)
7	Scrubber flow monitoring	Continuous	§63.990(c)(1) and §63.996(b)(1) and (d)(2)
8	Operation and maintenance of continuous parameter monitoring systems	See regulation	§63.996(c)
9	General recordkeeping	See regulation	§63.1109(a - d)
10	Malfunction recordkeeping	As required	§63.1111(c)(1)
	40 CFR Part 63, sub	parts DDDDD re	quirements
11	NESHAP Recordkeeping (Alternative fuel use)	See regulation	§63.7560

#### **TABLE 4.3.4**

#### Monitoring and Recordkeeping Requirements:

- 1. The facility owner or operator shall record and maintain hourly VOC emission calculations (monthly average) and consecutive 12-month rolling period emission calculations (all permitted pollutants) to demonstrate compliance with the emission limits for the Solid Cyanides Process.
- 2. The facility owner or operator shall record and maintain hourly records of the air flow rate of the Process Air Vent (EPN-401).
- 3. The facility owner or operator shall record and maintain the following monthly and consecutive 12-month rolling period records:
  - a) Volume of natural gas burned in the Process Air Heater (EPN- 402);
  - b) Hours of operation of the Heater Air Vent (EPN-405); and
  - c) Hours of exhaust operation of the Filter Vent (EPN-406)
- 4. The facility owner or operator shall maintain records of the nominal heat rating in MMBtu/hr for the Process Air Heater (EPN- 402).

#### Monitoring and Recordkeeping Requirements (continued):

#### 40 CFR Part 63, subparts YY and SS requirements

- 5. The facility owner or operator shall comply with the applicable leak detection and repair (LDAR) monitoring and recordkeeping requirements for the Solid Cyanides Process within 40 CFR Part 63, subpart TT.
- 6. Leaks of the closed vent system, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired by the facility owner or operator as soon as practical as follows:
  - a) A first attempt at repair shall be made no later than 5 days after the leak is detected.
  - b) Repairs shall be completed no later than 15 days after the leak is detected or at the beginning of the next introduction of vapors to the system, whichever is later.
  - c) Delay of repair of a closed vent system for which leaks have been detected is allowed if repair within 15 days after a leak is detected is technically infeasible or unsafe without a closed vent system shutdown (Closed vent system shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a closed vent system or part of a closed vent system consistent with safety constraints and during which repairs can be effected. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a closed vent system shutdown. An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the closed vent system or part of the closed vent system of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled closed vent system shutdown, is not a closed vent system shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not closed vent system shutdowns), or if the owner or operator determines that emissions resulting from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of such equipment shall be completed as soon as practical, but not later than the end of the next closed vent system shutdown.
- 7. The facility owner or operator shall continuously monitor and record the flow of scrubbing liquids as follows:
  - a) Recycle Scrubber make-up water and recirculation water flow rates;

Monitoring and Recordkeeping Requirements (continued):

- b) Demister Scrubber total water flow rate (the combination of make-up water and recirculation water)
- c) Dust & Fume Scrubber make-up water and recirculation water flow rates

The monitoring system must be equipped with an audible warning for conditions of low flow or no flow.

- 8. The facility owner or operator shall perform operation and maintenance of continuous parameter monitoring systems as follows:
  - a) All monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately;
  - b) The owner or operator of a regulated source shall maintain and operate each continuous parameter-monitoring system (CPMS) in a manner consistent with good air pollution control practices;
  - c) The owner or operator of a regulated source shall ensure the immediate repair or replacement of CPMS parts to correct "routine" or otherwise predictable CPMS malfunctions. The necessary parts for routine repairs of the affected equipment shall be readily available.
  - d) All CPMS's shall be installed such that representative measurements of parameters from the regulated source are obtained; and
  - e) Except for system breakdowns, repairs, maintenance periods, instrument adjustments, or checks to maintain precision and accuracy, calibration checks, and zero and span adjustments, all continuous parameter-monitoring systems shall be in continuous operation when emissions are being routed to the monitored device.
- 9. The facility owner or operator shall maintain records in accordance with §63.1109 (a d).
- 10. The facility owner or operator shall keep the malfunction records specified in paragraphs (c)(1)(i) through (iii) of § 63.1111 as follows:
  - a) In the event that an affected unit fails to meet an applicable standard, record the number of failures. For each failure record the date, time, and duration of each failure;

#### Monitoring and Recordkeeping Requirements (continued):

- b) For each failure to meet an applicable standard, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions; and
- c) Record actions taken to minimize emissions in accordance with § 63.1108(a)(4)(ii), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

#### 40 CFR Part 63, subpart DDDDD requirements

- 11. If you operate a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to subpart DDDDD, and you intend to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of this part, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in § 63.7575, you must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in § 63.7575. The notification must include the following information:
  - a) Company name and address;
  - b) Identification of the affected unit;
  - c) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began;
  - d) Type of alternative fuel that you intend to use; and
  - e) Dates when the alternative fuel use is expected to begin and end.

### **Reporting Requirements**

Condition No.	Description	Frequency	Cite
1	Compliance monitoring reports	Semiannual	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]
	40 CFR Part 63,	subpart YY requi	rements
2	NESHAP periodic compliance reporting	Semiannual	§63.1110(a) and §63.1110(e)
3	Startup, shutdown and malfunction reports	Semiannual	§63.1111(b)(1)
4	Immediate Startup, shutdown and malfunction reports	As required	§63.1111(b)(2)
5	Reports of malfunctions	As required	§63.1111(c)(2)
6	LDAR updated lists of equipment counts	As required	§63.1018(a)(1)
	40 CFR Part 63, sub	ppart DDDDD red	quirements
7	Alternate fuel use notification	Per event	§63.7545(f)
8	Fuel switching notification	Per event	§63.7545(h)
9	NESHAP periodic compliance reporting	5 years	§63.7550(c)
10	Deviation reporting	5 years	§63.7550(d)
11	Report submittal	5 years	§63.7550(h)(3)

#### **TABLE 4.3.5**

#### Reporting Requirements:

- 1. The facility owner or operator shall submit the following records to the Department, on a semiannual basis, for the previous consecutive 12-month rolling period. These records shall be submitted with the semiannual monitoring report required under Section IV, Facility-Wide Requirements, Reporting Requirements, Condition No. 1.
  - a. Monthly and consecutive 12-month rolling period emissions from the Solid Cyanides Process as follows:

TADLE 4.5.0					
Emission Group	Emission Point	Description	Pollutant (Tons/12-months)		
N01	402	Process Air Heater Combustion Vent	PM/PM <sub>10</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> and VOC		
N03 (Dry End)	401	Process Air Vent	PM/PM <sub>10</sub> and VOC		
	404	Dust & Fume Scrubber			
	405	Heater Air Vent			
	406	Filter Vent			
N02	407	Hotwell Vent	NOC		
(Wet End)	408	Feedwell Vent	VUC		

## **TABLE 4.3.6**

Reporting Requirements (continued):

- b. Maximum hourly (monthly average) (lbs/hr) VOC emissions during the reporting period from the Solid Cyanides Process (Same pollutant parameters as shown in Table 4.3.6).
- c. Air flow rate from the Process Air Vent (EPN-401) for periods exceeding 7,000 scfm;
- d. Volume of natural gas burned in the Process Air Heater (EPN- 402);
- e. Hours of operation of the Heater Air Vent (EPN-405); and
- f. Hours of exhaust operation of the Filter Vent (EPN-406)

### **Scrubbers**

- g. Records of all periods when the make-up water flow rate for the Recycle Scrubber is less than or equal to 4 gpm
- h. Records of all periods when the recirculation flow rate for the Recycle Scrubber is less than or equal to 90 gpm;
- i. Records of all periods when the total water flow rate (the combination of make-up water and recirculation water) for the Demister Scrubber is less than or equal to 100 gpm
- j. Records of all periods when the make-up water flow rate for the Dust & Fume Scrubber is less than or equal to 1.6 gpm
- k. Records of all periods when the recirculation flow rate for the Dust & Fume Scrubber is less than or equal to 30 gpm; and

## 40 CFR Part 63, subpart YY requirements

2. The facility owner or operator shall submit semi-annual Periodic Reports in accordance with §63.1110(a) (5) and §63.1110(e). The Periodic Report shall be submitted no later than 60 days after the end of each 6-month period. Information required by 40 CFR Part 60, subpart YY, which is submitted with a title V periodic report, need not also be included in the Periodic Report required by subpart YY or a subpart referenced by this subpart. The title V report shall be referenced in the Periodic Report required by this subpart.

The facility owner or operator may submit Periodic Reports on the same schedule as the title V periodic report for the facility.

### Reporting Requirements (continued):

3. If actions taken by an owner or operator during a startup, shutdown, and malfunction of an affected source, or of a control device or monitoring system required for compliance (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected source's plan, then the owner or operator shall state such information in a startup, shutdown, and malfunction report.

During the reporting period, reports shall only be required for startups, shutdowns, and malfunctions during which excess emissions, as defined in 63.1108(a)(5), occur during the reporting period. A startup, shutdown, and malfunction report can be submitted as part of a Periodic Report required under 63.1110(a)(5), or on a more frequent basis if specified otherwise under this subpart or a subpart referenced by this subpart.

The startup, shutdown, and malfunction report shall be delivered or postmarked by the 30th day following the end of each calendar half (or other calendar reporting period, as appropriate), unless the information is submitted with the Periodic Report. The report shall include the information specified in paragraphs (b)(1)(i) through (b)(1)(iv) of §63.1111.

- 4. Immediate Startup, shutdown, and malfunction reporting: Any time an action taken by the facility owner or operator during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) during which excess emissions occur is not consistent with the procedures specified in the affected source's plan, the owner or operator shall report the actions taken for that event as specified in 40 CFR §63.1111(b).
- 5. If the source fails to meet an applicable standard, report such events in the Periodic Report. Report the number of failures to meet an applicable standard. For each instance, report the date, time and duration of each failure. For each failure the report must include a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.
- 6. Upon addition of any equipment (valves, pumps, flanges, and etc.) that is subject to 40 CFR Part 63, Subpart TT, the owner or operator shall resubmit the initial periodic report according 40 CFR §63.1018(a)(1) that includes updated lists of equipment counts.

### 40 CFR Part 63, subpart DDDDD requirements

7. If you operate a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to subpart DDDDD, and you intend to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of this part, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in § 63.7575, you must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in § 63.7575.

Reporting Requirements (continued):

- a) Company name and address;
- b) Identification of the affected unit;
- c) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began;
- d) Type of alternative fuel that you intend to use; and
- e) Dates when the alternative fuel use is expected to begin and end.
- 8. If you switch fuels or make a physical change to any boiler and the fuel switch or physical change results in the applicability of a different subcategory under Subpart DDDDD, you must provide notice of the date upon which you switched fuels or made the physical change within 30 days of the action. The notification must identify:
  - a) The name of the owner or operator of the affected source, as defined in §63.7490, the location of the source, the boiler(s) and process heater(s) that have switched fuels, were physically changed, and the date of the notice;
  - b) The currently applicable subcategory under this subpart; and
  - c) The date upon which the fuel switch or physical change occurred.
- 9. The facility owner or operator shall submit a compliance report for each affected combustion unit. These reports shall be submitted every 5-years and include the following information:
  - a) Company and facility name and address;
  - b) Process unit information, emissions limitations, and operating parameter limitations;
  - c) Date of report and beginning and ending dates of the reporting period;
  - d) Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual, biennial, or 5-year tune-up according to § 63.7540(a)(10), (11), or (12) respectively. Include the date of the most recent burner inspection if it was not done annually, biennially, or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown;
  - e) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report; and
  - f) 5-year compliance reports must cover the applicable 5-year periods from January 1 to December 31 and are due by January 31.

#### Reporting Requirements (continued):

- 10. For each deviation from work practice standards for periods of startup and shutdown, the compliance report must additionally contain the following information:
  - a) A description of the deviation and which emission limit, operating limit, or work practice standard from which you deviated; and
  - b) Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken.
- 11. The facility owner or operator must submit all reports required by Table 9 of this subpart electronically to the EPA via the CEDRI in accordance with §63.7550(h)(3).

### Emission Unit 4 (EU4) (Power Area)

## **Emission Limits and Restrictions**

#### **TABLE 4.4.1**

Condition No.	Pollutant (Parameter)	Limitation	Cite
1	PM/PM <sub>10</sub> , CO, NO <sub>x</sub> , SO <sub>2</sub> ,	Consecutive 12-month period emission limits	PSD avoidance and Shelby County Air Code Section 3-5 [Reference Rules and Regulations
2	VOC	Maximum nominal heat rating	of Tennessee, Rule 1200-3-902(11)(e)1(1)]
3	<b>PM/PM</b> <sub>10</sub>	Non-process particulate matter emission standard	Shelby County Air Code Section 3-21 [Reference Rules and Regulations of Tennessee, Rule 1200-3-602(2)]
4	PM/PM10, CO,	Maximum boiler natural gas usage	PSD avoidance and Shelby County Air Code
5	NO <sub>x</sub> , SO <sub>2</sub> , VOC	Minimum firebox temperatures of Boiler #1 or #2	Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-902(11)(e)1(i)]
		40 CFR Part 63, subpart DDDDD red	quirements
6	НАР	Fuel type restriction	§63.7575 (Definition) and subpart Table 3 (Item 1)
7	HAP	Oxygen trim system requirement	§63.7540(a)(12)
8	НАР	Boiler tune ups	§63.7500 (Reference subpart Table 3), §63.7515 and §63.7540
9	HAP	Energy assessment	§63.7500
10	HAP	Work practice standards	§63.7500

**Emission Limits and Restrictions:** 

1. The facility owner or operator shall limit consecutive 12-month rolling emissions from all boilers (EPN-501 (Boilers #1 and 2), 502 (Boiler #3) and 503 (Boiler #4)) as follows:

Pollutant	Tons/12-months		
$PM/PM_{10}$	20.0		
$SO_2$	1.0		
VOC	3.0		
СО	32.0		
NO <sub>x</sub>	709.0		

**TABLE 4.4.2** 

2. The facility owner or operator shall limit the maximum nominal heat ratings of the for boilers as follows:

1ADLE 4.4.3				
Emission Source	Emission Point	Source Description	Capacity (MMBtu/hr)	
P01	— EPN-501	Boiler #1	78.7	
P02		Boiler #2	78.7	
P03	EPN-502	Boiler #3	155	
P04	EPN-503	Boiler #4	155	

# **TABLE 4.4.3**

### EU4 Power Area

#### Emission Limits and Restrictions (continued):

3. The maximum allowable particulate matter emissions (lbs/MMBtu) for the boilers shall not exceed the following:

Emission Source	Emission Point	Source Description	PM Emissions (lbs/MMBtu)
P01	EPN-501	Boiler #1	0.35
P02		Boiler #2	0.35
P03	EPN-502	Boiler #3	0.29
P04	EPN-503	Boiler #4	0.13

**TABLE 4.4.4** 

- 4. When the maximum quantity of absorber off gas is combusted (Reference Table 4.2.4) the combined maximum total quantity of natural gas combusted in Boilers # 1 4 boilers shall not exceed  $606.2 \times 10^6$  cubic feet per consecutive 12-month rolling period.
- 5. When absorber off gas is combusted in Boiler #1 or Boiler #2, the firebox temperature of these boilers shall not be less than 650° F (3-hour average).

### 40 CFR Part 63, subpart DDDDD requirements

- 6. Each boiler shall be limited to the use of only natural gas or other Gas 1 Fuels as defined in §63.7575.
- 7. Each boiler shall be equipped with a continuous oxygen trim system that maintains an optimum air to fuel ratio.
- 8. The facility owner or operator shall conduct tune-ups on each boiler in accordance with \$63.7500 (Reference subpart Table 3) every 5-years as specified in \$63.7515 and \$63.7540.
- 9. The facility owner or operator shall have a one-time energy assessment performed by a qualified energy assessor in accordance with §63.7500 (Reference subpart Table 3) on each boiler.
- 10. The facility owner or operator must operate and maintain each boiler, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
# Monitoring and Recordkeeping Requirements

Condition	Description	Frequency	Cite	
No.				
1	Emission calculations	Monthly		
2	Boiler nominal heat rating records	Continuous		
3	Boiler fuel usage	Monthly		
4	Boiler # 1 and 2 temperature monitoring	Continuous	Shelby County Air Code Section 3-7	
5	Boiler # 1 and 2 temperature records		Tennessee, Rule 1200-3-1004(2)]	
6	Boiler # 3 operating parameter monitoring when combusting HCN absorber off gas	ter monitoring when Continuous sorber off gas		
7	Boiler # 1, 2 and 3 absorber off gas flow records	Continuous		
40 CFR Part 63, subpart DDDDD requirements				
8	NESHAP Recordkeeping	See regulation	§63.7560	

## **TABLE 4.4.5**

Monitoring and Recordkeeping Requirements:

- 1. The facility owner or operator shall record and maintain monthly and consecutive 12-month rolling period emission calculations to demonstrate compliance with the emission limits for the Power Area.
- 2. The facility owner or operator shall maintain records of the nominal heat rating in MMBtu/hr for Boilers # 1 4.
- 3. The facility owner or operator shall maintain records of monthly and consecutive 12-month rolling period fuel usage records as follows:
  - a) HCN Absorber off gas combusted in Boilers # 1 3;
  - b) Facility-wide HCN Absorber off gas combusted; and
  - c) Natural gas combusted in Boilers #1 4
- 4. The facility owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications or other written procedures, a temperature monitoring device in the firebox of Boilers # 1 and 2 equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5°C, whichever is greater.
- 5. The facility owner or operator shall record and maintain the average combustion temperature of Boilers # 1 and 2 at least every 15 minutes and averaged over 3-hours, of which instrumentation is allowed 3% maintenance outage per consecutive 12-month rolling period when boiler operation is demonstrated by alternate performance records, such as steam rate or equivalent (e.g. boiler feed water flow).

### Monitoring and Recordkeeping Requirements (continued):

- 6. When combusting HCN absorber off gas in Boiler # 3, the facility owner or operator shall record and maintain steam flow records or equivalent (e.g. boiler feed water flow).
- 7. The facility owner or operator shall maintain continuous records of HCN absorber off gas flow to Boilers # 1, 2 and 3.

# 40 CFR Part 63, subpart DDDDD requirements

- 8. The facility owner or operator shall maintain records in accordance with §63.7560 as follows:
  - a) Your records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1);
  - b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record; and
  - c) You must keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). You can keep the records off site for the remaining 3 years.

# **Reporting Requirements**

Condition No.	Description	Frequency	Cite	
1	Compliance monitoring reports	Semiannual	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]	
40 CFR Part 63, subpart DDDDD requirements				
2		Per event	§63.7545(f)	
3	Fuel switching notification	Per event	§63.7545(h)	
4	Compliance reporting	5 years	§63.7550(c)	
5	Deviation reporting	5 years	§63.7550(d)	
6	Report submittal	5 years	§63.7550(h)(3)	

#### **TABLE 4.4.6**

#### Reporting Requirements:

- 1. The facility owner or operator shall submit the following records to the Department, on a semiannual basis, for the previous consecutive 12-month rolling period. These records shall be submitted with the semiannual monitoring report required under Section IV, Facility-Wide Requirements, Reporting Requirements, Condition No. 1.
  - a) Monthly and consecutive 12-month rolling period emissions from the Power Area;
  - b) Monthly and consecutive 12-month rolling period HCN Absorber off gas combusted in Boilers # 1 3;
  - c) Monthly and consecutive 12-month rolling period facility-wide HCN Absorber off gas combusted; and
  - d) Monthly and consecutive 12-month rolling period natural gas combusted in Boilers # 1-4

# 40 CFR Part 63, subpart DDDDD requirements

2. If you operate a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to subpart DDDDD, and you intend to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of this part, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in § 63.7575, you must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in § 63.7575.

Reporting Requirements (continued):

The notification must include the following information:

- a) Company name and address;
- b) Identification of the affected unit;
- c) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began;
- d) Type of alternative fuel that you intend to use; and
- e) Dates when the alternative fuel use is expected to begin and end.
- 3. If you switch fuels or make a physical change to any boiler and the fuel switch or physical change results in the applicability of a different subcategory under Subpart DDDDD, you must provide notice of the date upon which you switched fuels or made the physical change within 30 days of the action. The notification must identify:
  - a) The name of the owner or operator of the affected source, as defined in §63.7490, the location of the source, the boiler(s) and process heater(s) that have switched fuels, were physically changed, and the date of the notice;
  - b) The currently applicable subcategory under this subpart; and
  - c) The date upon which the fuel switch or physical change occurred.
- 4. The facility owner or operator shall submit a compliance report for each boiler. These reports shall be submitted every 5-years and include the following information:
  - a) Company and facility name and address;
  - b) Process unit information, emissions limitations, and operating parameter limitations;
  - c) Date of report and beginning and ending dates of the reporting period;
  - d) Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual, biennial, or 5-year tune-up according to § 63.7540(a)(10), (11), or (12) respectively. Include the date of the most recent burner inspection if it was not done annually, biennially, or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown;

Reporting Requirements (continued):

- e) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report; and
- f) 5-year compliance reports must cover the applicable 5-year periods from January 1 to December 31 and are due by January 31;
- 5. For each deviation from work practice standards for periods of startup and shutdown, the compliance report must additionally contain the following information:
  - a) A description of the deviation and which emission limit, operating limit, or work practice standard from which you deviated; and
  - b) Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken.
- 6. The facility owner or operator must submit all reports required by Table 9 of this subpart electronically to the EPA via the CEDRI in accordance with §63.7550(h)(3).

## Emission Unit 5 (EU5) (Emergency Engines)

# **Emission Limits and Restrictions**

#### **TABLE 4.5.1**

Condition No.	Pollutant (Parameter)	Limitation	Cite	
		All Emergency Engines		
1	NO <sub>x</sub> , CO, HAP	Emergency engine NSPS and NESHAP requirements	40 CFR 60, subpart IIII and 40 CFR 63, subpart ZZZZ (§63.6605(a))	
2	$SO_2$	Emergency Generator diesel fuel sulfur content limit	§60.4207(b) and §63.6604(b)	
3	NO <sub>x</sub> , CO, HAP	General maintenance requirements (Operate and maintain emergency engines according to manufacturer's emission-related instructions and specifications)	§60.4211(a-b), §63.6625(e), §63.6640 and Table 6 (item 9) to Subpart ZZZZ	
4	NO <sub>x</sub> , CO, HAP	Non-emergency operating hours (Allowable use)	§60.4211(f)(2-3) and §63.6640(f)(2-4)	
5	NO <sub>x</sub> , CO, HAP	Non-emergency operating hours (Restriction)	§60.4211(f)(3) and §63.6640(f)(4)	
6	NO <sub>x</sub> , CO, HAP	Emergency operating hours	§60.4211(f)(1) and §63.6640(f)(1)	
7	NO <sub>x</sub> , CO, HAP	Non-resettable hour meter requirement	§60.4209 and §63.6655(f)	
		NSPS affected Emergency Engines only (P1	0 and 11)	
8	NO <sub>x</sub> , CO, HAP	NSPS emission standards for new Generac emergency engines	§60.4202(a)(2) and 40 CFR 89.112	
9	NO <sub>x</sub> , CO, HAP	NSPS exhaust opacity limitations	§60.4202(a)(2) and 40 CFR 89.113	
NESHAP affected Emergency Engines only (P5 through P9)				
10	NO <sub>x</sub> , CO, HAP	Non-NSPS emergency engine maintenance requirements	§63.6602 and Table 2(c)(item 1) to Subpart ZZZZ	
11	NO <sub>x</sub> , CO, HAP	Non-NSPS emergency engine idle minimization at start-up	<pre>§63.6602 and Table 2(c)(item 1) to Subpart ZZZZ and §63.6625(h)</pre>	
12	NO <sub>x</sub> , CO, HAP	General Subpart ZZZZ compliance requirements	§63.6605(b)	

**Emission Limits and Restrictions:** 

# All Emergency Engines

1. The following emergency engines at this facility are subject to and shall comply with the emission limitations, operating limitations, and other requirements of 40 CFR Part 60, Subpart IIII "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" and 40 CFR Part 63, Subpart ZZZZ, "National Emissions Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines" as applicable:

Emission Limits and Restrictions (continued):

Emission Unit ID	Description	Fuel	Manufacture Date	HP	Applicable Regulation
P05	Fire Pump Engine #2 – ACRN South Engine	Diesel	Prior to 12/19/02	269	
P06	Fire Pump Engine #3 – MMA North Engine	Diesel	After 6/12/06	332	
P07	Fire Pump Engine #4 – MMA South Engine	Diesel	Before	282	40 CFR Part 63, Subpart ZZZZ
P08	HCN Tank Farm Emergency Generator Engine #1	Diesel	5/27/05 6/12/06	174	
P09	HCN Tank Farm Emergency Generator Engine #2	Diesel	5/27/05	174	
P10	Generac Emergency Generator #3	Diesel	2021	755	40 CFR Part 60, Subpart IIII and 40 CFR Part 62, Subpart
P11	Generac Emergency Generator #4	Diesel	2021	755	ZZZZ

Table	4.5.2
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- 2. The facility owner or operator shall use diesel fuel, for Generac Emergency Generators #3 and 4 (P10 and P11), which meets the requirements of 40 CFR 1090.305 for non-road diesel fuel as follows:
  - a) A maximum sulfur content of 15 ppm; and
  - b) A minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
- 3. The facility owner or operator shall operate and maintain each emergency engine as follows:
  - a) Operate and maintain the stationary engines according to the manufacturer's emission-related written instructions and specifications;
  - b) Change only those emission-related settings that are permitted by the manufacturer; and
  - c) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply (NSPS units (P10 and P11 only).

Emission Limits and Restrictions (continued):

- 4. Each emergency engine can be used for 100 hours per year for the following purposes:
  - a) Maintenance checks;
  - b) Readiness testing;
  - c) Non-emergency situations with up to 50 hours per year of maximum operation limit;
  - d) Emergency demand response for Energy Emergency Alert Level 2 situations; and
  - e) Responding to situations where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.
- 5. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of 63.6640. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
- 6. There is no time limit on the use of emergency engines in emergency situations.
- 7. The facility owner or operator shall equip each emergency engine with a non-resettable hour meters to keep records of the hours of operation of each engine.

# NSPS affected Emergency Engines only (P10 and 11)

8. The facility owner or operator shall limit emissions from Generac Emergency Generators #3 and 4 (P10 and P11) as follows

Pollutant (grams/kW-hr)					
NO <sub>x</sub> + NMHC CO PM					
4.0	3.5	0.20			

<b>Table 4.5.3</b>
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Emission Limits and Restrictions (continued):

- 9. The facility owner or operator shall limit the exhaust opacity from Generac Emergency Generators #3 and 4 (P10 and P11) as not to exceed the following:
  - a) 20 percent during the acceleration mode;
  - b) 15 percent during the lugging mode; and
  - c) 50 percent during the peaks in either the acceleration or lugging modes.

NESHAP affected Emergency Engines only (P5 through P9)

- 10. The facility owner or operator shall perform the listed maintenance items for non-NSPS emergency engines (P05 through P09) as per the following schedule:
  - a) Change oil and filter every 500 hours of operation or annually, whichever comes first;
  - b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and
  - c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
- 11. The facility owner or operator shall minimize non-NSPS emergency engine (P05 through P09) time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
- 12. The facility owner or operator shall at all times operate and maintain non-NSPS emergency engines (P05 through P09), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

# Monitoring and Recordkeeping Requirements

Condition No.	Description	Frequency	Cite	
	All Eme	rgency Engines		
1	Maintenance Records	As necessary	§60.4214, §63.6655 and Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]	
2	Malfunction records	As necessary	§63.6655(a) and Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]	
3	Operating hour records	Continuous	§63.6655(f) and Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]	
4	Emission Calculations	Monthly	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]	
NSPS affected Emergency Engines only (P10 and 11)				
5	NSPS compliance records	As specified	§60.4214(a)(2)	
NESHAP affected Emergency Engines only (P5 through P9)				
6	NSPS compliance records	As specified	§63.6655(a)	

#### **TABLE 4.5.4**

Monitoring and Recordkeeping Requirements:

- 1. The facility owner or operator shall maintain records of the maintenance conducted on each emergency engine in order to demonstrate that each source has been operated and maintained in accordance with the applicable regulation.
- 2. The facility owner or operator shall maintain records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. Records shall also be kept of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
- 3. The facility owner or operator shall keep records of the hours of operation of each engine that are recorded through the non-resettable hour meters. Documentation shall be maintained detailing how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If any engine is used for the purposes specified in §63.6640(f)(2)(ii or iii), §63.6640(f)(4)(ii), §60.4211(f)(2)(ii or iii), or §60.4211(f)(3)(i), as applicable, the facility owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

### Monitoring and Recordkeeping Requirements (continued):

4. The facility owner or operator shall record and maintain annual emission calculations for each emergency engine. (*Amended January 29, 2025*)

### NSPS affected Emergency Engines only (P10 and 11)

- 5. The facility owner or operator shall maintain:
  - a) All notifications submitted to comply with 40 CFR Part 60, subpart IIII and all documentation supporting any notification; and
  - b) Documentation from the manufacturer that the engine is certified to meet the emission standards in 40 CFR Part 60, subpart IIII

### NESHAP affected Emergency Engines only (P5 through P9)

6. The facility owner or operator shall maintain a copy of each notification and report submitted to comply with 40 CFR Part 63, Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv).

# **Reporting Requirements**

TABLE	4.5.5
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Condition No.	Description	Frequency	Cite
1	Compliance monitoring reports	Semiannual	Shelby County Air Code Section 3-7 [Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]
2	Deviation reporting	Semiannual	<ul> <li>§63.6640(b), §63.6650(f) and</li> <li>Shelby County Air Code Section 3-7</li> <li>[Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]</li> </ul>
3	NSPS and NESHAP annual reporting	Annual	<ul> <li>§60.4214(d), §63.6650(h) and</li> <li>Shelby County Air Code Section 3-7</li> <li>[Reference Rules and Regulations of Tennessee, Rule 1200-3-1004(2)]</li> </ul>

#### Reporting Requirements:

- 1. The facility owner or operator shall submit the following records to the Department, on a semiannual basis, for the previous consecutive 12-month rolling period. These records shall be submitted with the semiannual monitoring report required under Section IV, Facility-Wide Requirements, Reporting Requirements, Condition No. 1.
  - a) Monthly and annual hours of operation as recorded on the resettable hour meters for each emergency engine. (*Amended January 29, 2025*)
- 2. The facility owner or operator shall report all deviations from applicable 40 CFR Part 60, Subpart IIII and 40 CFR Part 63, Subpart ZZZZ emission or operating limitations within the Title V semi-annual report required under Section IV, Facility-Wide Requirements, Reporting Requirements, Condition No. 1.
- 3. For each emergency engine with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii or iii), §63.6640(f)(4)(ii), §60.4211(f)(2)(ii or iii), or §60.4211(f)(3)(i) the facility owner or operator must submit an annual report containing the following:
  - a) Company name and address where the engine is located;
  - b) Date of the report and beginning and ending dates of the reporting period;
  - c) Engine site rating and model year;

Reporting Requirements (continued):

- d) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place;
- e) Hours operated for the purposes specified in §60.4211(f)(2)(ii-iii) and §63.6640(f)(2)(ii-iii), including the date, start time, and end time for engine operation for the purposes specified in §60.4211(f)(2)(ii-iii) and §63.6640(f)(2)(ii-iii);
- f) Number of hours the engine is contractually obligated to be available for the purposes specified in §60.4211(f)(2)(ii-iii) and §63.6640(f)(2)(ii-iii);
- g) Hours spent for operation for the purposes specified in § 60.4211(f)(3)(i) and §63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in § 60.4211(f)(3)(i) and §63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine;
- h) If there were no deviations from the fuel requirements in §60.4207 and §63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period; and
- i) If there were deviations from the fuel requirements in §60.4207 and §63.6604 that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken.

Annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in §60.4.

# **SECTION V – OTHER REQUIREMENTS**

# USE OF OZONE DEPLETING SUBSTANCES

- 1. The permittee shall comply with the standards for labeling of products using ozone depleting substances pursuant to 40 CFR 82, subpart E:
  - a) All containers containing a class I or class II substance being stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to §82.106;
  - b) The placement of the required warning statement must comply with the requirements pursuant to §82.108;
  - c) The form of the label bearing the required warning statement must comply with the requirements pursuant to §82.110; and
  - d) No person may modify, remove, or interfere with the required warning statement except as described in §82.112.
- 2. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, subpart F, except as provided for motor vehicle air conditioners (MVAC's) in subpart B:
  - a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156;
  - b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to \$82.158;
  - c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161;
  - d) Persons disposing of small appliances, MVAC's, and MVAC-like appliances must comply with the record keeping requirements pursuant to §82.166. (MVAC-like appliance as defined at §82.152);
  - e) Persons owning commercial or industrial process refrigeration equipment must comply with the leak repair requirements pursuant to §82.156; and
  - f) Owner or operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.

- 3. If the permittee manufactures, transforms, imports, or exports a class I or class II substance, the permittee is subject to all the requirements as specified in 40 CFR 82 subpart A, Production and Consumption Controls.
- 4. If the permittee performs a service on motor (fleet) vehicles when this service involves ODS refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR 82, subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in subpart B does not include the airtight sealed refrigeration system used as refrigerated cargo, or system used on passenger buses using HCFC-22 refrigerant.
- 5. The permittee shall be allowed to switch from any ODS to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR 82, subpart G, Significant New Alternatives Policy Program.

# **OPERATIONAL FLEXIBILITY**

The permittee has requested specific operational flexibility provisions to be included in addition to that provided in the Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(a)(4)].

1. In those cases where the facility owner or operator is required to monitor the operating performance of equipment, as specifically designated in this permit, a minimum value of 90% is allowed for the collection of monitoring data, unless otherwise specified. For example, where the facility owner or operator is required to perform a weekly pressure drop recording for a baghouse emission point to demonstrate compliance with the particulate limits in this permit, a minimum of 47 ( $47 \div 52 = 90.4\%$ ) weeks of data is required.

# COMPLIANCE PLAN(S)

There is no compliance plan for the facility.

# **SECTION IV – GENERAL CONDITIONS**

(Amended January 29, 2025)

#### **General Permit Conditions for Title V Operating Permits**

- 1. <u>Severability</u>: The requirements of this permit issued pursuant to Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)] are severable. A dispute regarding one or more permit requirements in this permit does not invalidate or otherwise excuse a permittee from their duty to comply with the remaining portion of this permit in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9.02(11)].
- 2. <u>Permit Shield</u>: In accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)6(i)] compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issue, provided:
  - a) Such applicable requirements are included and are specifically identified in this permit; or
  - b) The Technical Manager, in acting on this permit application or revision, determines, in writing, that other requirements specifically identified are not applicable to the source, and this permit includes the determination or a concise summary thereof; and
  - c) The permit shield does not extend to minor permit modifications made pursuant to Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(f)5.(ii)(VI)].
- 3. <u>Permit Actions for Cause</u>: This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)1(vi)(III)].
- 4. <u>Circumvention of Regulations</u>: No person shall use any plan, activity, device or contrivance that the Technical Manager determines will, without resulting in an actual reduction of air contaminants, conceal or appear to minimize the effects of an emission that would otherwise constitute a violation of this permit or any applicable requirement. Methods considered circumvention of the regulations, as stated in Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.03(2)], include but are not limited to:
  - a) Air (or other gases) introduced for dilution purposes only; and
  - b) The staggered installation and operation of a facility to avoid coverage by a standard that applies only to operations larger than a specified size.

- 5. <u>Creating a Traffic Hazard or Interfering with Public Transportation</u>: No person shall discharge from any source whatsoever such quantities of air contaminant, uncombined water, or other materials which cause or have a tendency to cause a traffic hazard or an interference with normal means of public transportation in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.03(3)].
- 6. <u>Defense for Noncompliance</u>: The need to halt or reduce activity is not a defense for noncompliance. It shall not be a defense for a 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 conditions of this permit.

However, nothing in this item shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)1(vi)(II)].

- 7. <u>Compliance Certification</u>: All compliance certifications submitted to the Department shall include the following in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)3(v)(III)]:
  - a) The identification of each term or condition of this permit that is the basis of the certification;
  - b) The compliance status of each term or condition of this permit during the certification period;
  - c) Whether compliance was continuous or intermittent;
  - d) The method(s) used for determining the compliance status of the source, currently and over the reporting period consistent with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11) (e)1(iii)] [Monitoring and related recordkeeping and reporting requirements]; and
  - e) Such other facts as the Technical Manager may require for determination of the compliance status of the source.
- 8. <u>Compliance Certification</u>: All compliance certifications required by this permit shall be submitted to the EPA as well as to the Technical Manager in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)3(v)(IV)].

- 9. <u>Compliance Certification</u>: Each compliance certification required by this permit shall contain such additional requirements as may be specified pursuant to sections 114(a)(3) and 504(b) of the Federal Act [Permit Requirements and Conditions: Monitoring and Analysis], and any other compliance requirement deemed necessary by the Technical Manager in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)3(v)(V) and -.02(11)(e)3(vi)].
- 10. <u>Responsible Official Certification</u>: Any application form, report, or compliance certification submitted pursuant to the requirements of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)] or this permit shall contain certification by a responsible official of truth, accuracy and completeness. This certification and any other certification required under Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)] or this permit shall contain certification and any other certification required under Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(d)4] shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
- 11. <u>Enforceability:</u> This permit is issued pursuant to the requirements of Title V of the Federal Act and its implementing Federal regulations promulgated at 40 CFR part 70. As such, the permittee is advised that:
  - a) All terms and conditions in this permit including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)]; and
  - b) Notwithstanding (a) above, in this permit labeled "local only requirements" the Technical Manager has specifically designated as not being federally enforceable under the Federal Act or under any of its applicable requirements.

Terms and conditions so designated are not subject to the requirements of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11) subparagraphs (f) {Permit Issuance, Renewal, Reopening and Revision} and (g) {Permit Review by EPA and Affected States}, other than those contained in part 1200-3-9-.02(11)(e)2].

12. <u>Federal Enforcement; Section 113(c)(2) of the Federal Act:</u> Any person who knowingly makes any false material statement, representation, or certification in, or omits material information from, or knowingly alters, conceals, or fails to file or maintain any notice, application, record, report, plan, or other document required pursuant to this Act to be either filed or maintained (whether with respect to the requirements imposed by the Administrator or by a State or the Department); fails to notify or report as required under the Act; or falsifies, tampers with, renders inaccurate, or fails to install any monitoring device or method required to be maintained or followed under this Act shall, upon conviction, be punished by a fine pursuant to title 18 of the United States Code, or by imprisonment for not more than 2 years, or both.

If a conviction of any person under this paragraph is for a violation committed after a first conviction of such person under this paragraph, the maximum punishment shall be doubled with respect to both the fine and imprisonment.

13. <u>Reasonable Measures Required During Startups, Shutdowns, and Malfunctions:</u> In accordance with Shelby County Code Section 3-9 [Reference Rules and Regulations of Tennessee, Rule 1200-3-20-.02(1)], Air contaminant sources must take all reasonable measures to keep emissions to a minimum during startups, shutdowns, and malfunctions.

These measures may include installation and use of alternate control systems, changes in operating methods or procedures, cessation of operation until the process equipment and/or air pollution control equipment is repaired, maintaining sufficient spare parts, use of overtime labor, use of outside consultants and contractors, and other appropriate means.

Failures that are caused by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions, and shall be considered in violation of the emission standard exceeded and this permit and rule.

14. <u>Notice Required When a Malfunction Occurs:</u> In accordance with Shelby County Code Section 3-9 [Reference Rules and Regulations of Tennessee, Rule 1200-3-20-.03], when any air contaminant source malfunctions in such a manner as to cause the emission of air contaminants in excess of the applicable emission standards contained in Division 1200-3 or any permit issued thereto, or of sufficient duration to cause damage to property or public health, the owner or operator of the air contaminant source shall promptly notify the Technical Manager of such malfunction and provide a statement giving all pertinent facts, including the estimated duration of the malfunction.

Violations of the visible emission standard (excluding visible emissions caused by hazardous air pollutants named in Chapter 1200-3-11), which occur for less than 20 minutes in one day (midnight to midnight) need not be reported.

Prompt notification will be within 24 hours of the malfunction and shall be provided by telephone to the Shelby County Health Department, Pollution Control Section. The Technical Manager shall be notified when the malfunction has been corrected. In attainment and unclassified areas if emissions other than from sources designated as significantly impacting on a nonattainment area in excess of the standards will not and do not occur over more than a 24-hour period (or will not recur over more than a 24-hour period) and no damage to property and or public health is anticipated, notification is not required.

Any malfunction that creates an imminent hazard to health must be reported by telephone immediately to the Shelby County Health Department, Pollution Control Section and the Emergency Management Agency.

- 15. Log of Malfunctions, Startups, and Shutdowns: In accordance with Shelby County Code Section 3-9 [Reference Rules and Regulations of Tennessee, Rule 1200-3-20-.04(1)], the facility owner or operator shall maintain a log, at the facility, of all malfunctions, startups, and shutdowns resulting in emissions in excess of the standards in the Shelby County Air Code, reference 1200-3 of the State of Tennessee Code, or any permit issued thereto must be kept at the facility. This log must record at least the following:
  - a) Stack or emission point involved;
  - b) Time of malfunction, startup, or shutdown or when first noticed;
  - c) Type of malfunction and/or reason for shutdown;
  - d) Time startup or shutdown was complete or time the air contaminant source returned to normal operation; and
  - e) The company employee making entry on the log must sign, date and state the time of each log entry.

The information under items (a) and (b) above must be entered into the log by the end of the shift during which the malfunction or startup began. All information shall be entered in the log no later than twenty-four (24) hours after the startup or shutdown is complete, or the malfunction has ceased or has been corrected. Any later discovered corrections can be added in the log as footnotes with the reason given for the change.

16. <u>Retention Period for Records and Supporting Information:</u> Records and supporting information required to be maintained by this permit shall be retained for a period of at least five (5) years from the date of the record in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)1(iii)(II)II].

Supporting information includes, but is not 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.

- 17. <u>Monitoring Records</u>: Records of monitoring information required by this permit, in accordance with Shelby County Air Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9.02(11)(e)1.(iii)(II)], shall include the following :
  - a) The date, place as defined in this permit, and time of sampling or measurements;
  - b) The date(s) analyses were performed;
  - c) The company or entity that performed the analysis;

- d) The analytical techniques or methods used;
- e) The results of such analyses; and
- f) The operating conditions as existing at the time of sampling or measurement.
- 18. <u>Information Requests:</u> In accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)1(vi)(V)], the permittee shall furnish to the Technical Manager, within a reasonable time, any information that the Technical Manager may request in writing to determine whether cause exists for modifying, revoking and reissuing, or termination of this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Technical Manager copies of records required to be kept by this permit. If the permittee claims that such information is confidential, the Technical Manager may review that claim and hold the information in protected status until such time that the Board can hear any contested proceedings regarding confidentiality disputes. If the Administrator (EPA) desires the information, the permittee may mail the information directly to the EPA.
- 19. <u>Access to Premises, Records, and Inspections</u>: Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Technical Manager or his authorized representative to perform the following for the purposes of determining compliance with the applicable permit requirements in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)3(ii)]:
  - a) Enter upon the permittee's premises at reasonable times where a source subject to Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)] is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
  - b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
  - c) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
  - d) As authorized by Shelby County Code Section 3-7, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

"Reasonable times" shall be considered to be customary business hours unless reasonable cause exists to suspect noncompliance with the Act, Shelby County Code, Division 1200-3, or any permit issued pursuant thereto and the Technical Manager specifically authorizes an inspector to inspect a facility at any other time.

- 20. <u>Permit Availability and Display:</u> The facility owner or operator shall maintain this operating permit readily available for inspection by the Technical Manager or his/her designated representative on the operating premises. A person required by regulations to have one or more operating permits shall keep at least one operating permit prominently and conspicuously displayed on the operating premises in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(5)].
- 21. <u>Emergency Orders, Liabilities, and Acid Rain:</u> Nothing in this permit issued pursuant to Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)6(iii)] shall alter or affect the following:
  - a) The provisions of section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section. Similarly, the provisions of T.C.A. 68-201-109 (emergency orders) including the authority of the Governor under Shelby County Code Section 3-4 including the authority of the Health Officer under the section;
  - b) The liability of the owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issue;
  - c) The applicable requirements of the acid rain program, consistent with section 408(a) [Permits and Compliance Plans: Permit Program] of the Federal Act; or
  - d) The ability of EPA and the Department to obtain information from a source pursuant to section 114 [Recordkeeping, Inspection, Monitoring, and Entry] of the Federal Act.
- 22. <u>Air Pollutant Episode Emissions Reduction Plan:</u> This source may be required to submit an acceptable air pollutant episode emissions reduction plan in accordance with Shelby County Code Section 3-14 [Reference Rules and Regulations of Tennessee, Rule 1200-3-15] detailing steps that can be taken to relieve a health hazard in the event that the Technical manager declares an air pollution alert, air pollution warning, or air pollution emergency. In the event that this plan is required, the source shall be notified in writing, and shall have thirty days to submit required the plan.
- 23. <u>Air Pollution Alerts, Warnings, and Emergencies:</u> In the event that the Technical Manager declares an air pollution alert, air pollution warning, or air pollution emergency, this source may be required to cease, curtail, postpone or defer production and allied operations to the extent possible without causing injury to persons or damage to equipment in accordance with Shelby County Code Section 3-14 [Reference Rules and Regulations of Tennessee, Rule 1200-3-15].
- 24. <u>Duty to File Accidental Release Plans:</u> Pursuant to Shelby County Code Section 3-38 [Reference Rules and Regulations of Tennessee, Rule 1200-3-32-.03]:

- a) Sources which are subject to the provisions of Section 112(r) of the federal Clean Air Act or any federal regulations promulgated thereunder, must file a copy of any plan or submittal required therein with the Technical Manager. If such a source is subject to the permitting requirements of Paragraph 1200-3-9-.02(11) and has failed to timely file their plan with the United States Environmental Protection Agency, the Technical Manager shall place them on a schedule of compliance to develop and file the plan. The schedule of compliance shall be placed on the source's operating permit consistent with the provisions of subpart 1200-3-9-.02(11)(e)3(iii).
- b) The Technical Manager is specifically authorized to request information from sources for the purpose of determining whether or not they are subject to Section 112(r) of the federal Clean Air Act or any federal regulations promulgated thereunder.
- c) Sources that have filed an accidental release plan shall annually certify in writing to the Technical Manager that they are properly following their accidental release plan. The annual certification is due in the office of the Technical Manager no later than January 31 of each year. Said certification will be for the preceding calendar year.
- Operational Flexibility: In accordance with Shelby County Code Section 3-5 [1200-3-9-25. .02(11)(a) the owner or operator may make certain changes at their facility that are contrary to or not addressed by this permit. The following changes can be made by the permittee without requiring a permit revision, if the changes are not modifications under Title I of the Federal Act or Division 1200-3 and the changes do not exceed the emissions allowable under this permit (whether expressed therein as a rate of emissions or in the terms of total emissions), provided, that the facility provides the Administrator and Technical Manager with written notification as required below in advance of the proposed changes, which shall be a minimum of 7 days. The Technical Manager may waive the 7-day advance notice in instances where the source demonstrates in writing that an emergency necessitates the change. Emergency shall be demonstrated by the criteria of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)7] (Emergency Provisions) and in no way shall it include changes solely to take advantages of an unforeseen business opportunity. The source, Technical Manager and EPA shall attach each such notice to their copy of the relevant permit.
  - a) The owner or operator may make a Section 502(b)(10) [as described above in this condition] change if their written notification contains a brief description of the change within the permitted facility; specifies the date on which the change will occur; declares any change in emissions; and

declares any permit term or condition that is no longer applicable as a result of the change. These permit shield provisions of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)6] shall not apply to Section 502(b)(10) changes; and

- b) The source may make operational flexibility changes that are not addressed or prohibited by this permit without a permit revision subject to the following requirements:
  - i. The change cannot be subject to a requirement of Title IV of the Federal Act or Shelby County Code Section 3-36 [Acid Precipitation Standard];
  - ii. The change cannot be a modification under any provision of Title I of the Federal Act or Division 1200-3;
  - iii. Each change shall meet all applicable requirements and shall not violate any existing permit term or condition;
  - iv. The owner or operator must provide contemporaneous written notice to the Technical Manager and EPA of each such change, except for changes that are below the threshold of insignificant activities and emission levels that are specified in Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.04];
  - v. Each change shall be described in the notice including the date, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change;
  - vi. The change shall not qualify for a permit shield under the provisions of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)6]; and
  - vii. The permittee shall keep a record describing the changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes. The records shall be retained until the changes are incorporated into subsequently issued permits.
- 26. <u>Construction Permits</u>: In accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.01(1)(a)], no person shall begin the construction of a new air contaminant source or the modification of an air contaminant source which may result in the discharge of air contaminants without first having applied for and received from the Technical Manager a construction permit for the construction or modification of such air contaminant source, except as specifically exempted in Rule 1200-3-9-.04 or excluded in subparagraph 1200-3-2-.01(1)(aa) or subparagraph 1200-3-2-.01(1)(cc).

27. <u>Construction Permits</u>: In accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.01(1)(b)], the application for a construction permit shall be made on forms available from the Technical Manager not less than ninety (90) days prior to the estimated starting date of construction.

Sources identified in Paragraph 1200-3-9-.01(4) shall make application for a construction permit not less than one hundred twenty (120) days prior to the estimated date of construction.

- 28. <u>New Construction or Modifications:</u> Construction or modification at this source that is subject to the provisions of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.01] shall be governed by the following:
  - a) The permittee shall designate in their construction permit application the route that they desire to follow for the purposes of incorporating the newly constructed or modified sources into their existing operating permit. The Technical Manager shall use that information to prepare the operating permit application submittal deadlines in their construction permit;
  - b) Sources desiring the permit shield shall choose the administrative amendment route of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(f)4] or the significant modification route of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(f)5(iv)]; and
  - c) Sources desiring expediency instead of the permit shield shall choose the minor permit modification procedure route of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(f)5(ii)] or group processing of minor modifications under the provisions of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(f)5(iii)] as applicable to the magnitude of their construction. (Reference Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(f)5(iii)] as applicable to the magnitude of their construction. (Reference Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-03-09-.02(11)(d) 1(i)(V)]).
- 29. <u>Permit Renewal and Expiration</u>: In accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(d)1(i)(III)], a timely renewal application is one that is submitted at least 180 days, but no more than 270 days prior to the expiration date of this major source operating permit.

In accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(f)3] permits that are being renewed are subject to the same procedural requirements, including those for public participation, affected State and EPA review, that apply to initial permit issuance.

Consistent with the provisions of Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(a)2] permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(f)2] (Requirement for a Permit) and item 1200-3-9-.02(11)(d)1(i)(III)].

30. <u>Permit Application Errors</u>: The owner or operator of this source has a duty to supplement or correct their application upon discovery that their application was incorrect or failed otherwise to address any facts relevant to permitting at the source.

The applicant must also provide additional information as necessary to address any requirements that become applicable to the source after the date that it has filed a complete application but prior to the release of a draft permit. Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(d)2].

- 31. <u>Permit Transference:</u> This permit is transferable from one person to another person, provided that:
  - a) Written notification of the ownership change is submitted to the Technical Manager no later than thirty (30) days after the change; and
  - b) The new owner or operator:
    - i. Does not make any changes to the stationary source that meet the definition of modification as defined in Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)], and
    - ii. Agrees to abide by the terms of the permit or notice of coverage or authorization, Shelby County Code Section 3-5 and any documented agreements made by the previous owner to the Technical Manager.
  - c) No operating permit, construction permit, notice of coverage, or notice of authorization is transferable from one air contaminant source to another air contaminant source or from one location to another location. The new operating permit, construction permit, notice of coverage, or notice of authorization required by Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.03(6)(b)] will be governed by rules in effect at the time of its issuance.

Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.03(6)].

- 32. <u>Changes Not Requiring Permit Modification</u>: The owner or operator of any air contaminant source to which any of the following changes are made, but would not be a modification requiring a construction permit, must notify the Technical Manager thirty (30) days before the change is commenced. Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(7)] defines these changes as:
  - a) change in air pollution control equipment;
  - b) change in stack height or diameter; and
  - c) change in exit velocity (of more than twenty-five (25%) percent) or exit temperature of more than fifteen (15%) percent (absolute temperature basis).
- 33. <u>New Applicable Requirements</u>: Additional applicable requirements under the Clean Air Act become applicable to a major part 70 source with a remaining permit term of three (3) or more years. Such a permit reopening shall be completed not later than 18 months after promulgation of the applicable requirement.

No such reopening of the permit 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 70.4(b)(10)(i) or (ii).

34. <u>Emissions Testing</u>: The owner or operator may be required to conduct or have conducted at his expense, tests to determine the emission level of specific air contaminants. Such tests shall be conducted in a manner approved by the Technical Manager.

The Department requires a 30-day notice of the scheduling of emissions tests in order that such tests are conducted in the presence of a representative in accordance with Shelby County Code Section 3-7.

- 35. <u>Asbestos:</u> Prior to the commencement of a demolition or renovation project involving asbestos, the facility owner or operator shall comply with the requirements of Shelby County Code Section 3-25 [Reference Rules and Regulations of Tennessee, Rule 1200-3-11-.02(2)(d)]. No owner or operator of a facility may install or reinstall on a facility component any insulating materials that contain commercial asbestos if the materials are either molded and friable or wet-applied and friable after drying. Disposal of asbestos shall be performed in accordance with Shelby County Code Section 3-25 [Reference Rules and Regulations of Tennessee, Rule 1200-3-11-.02(2)(j)].
- 36. <u>Open Burning</u>: The open burning of residential, commercial, institutional, or industrial solid waste is prohibited except as specified in this permit or in Shelby County Code Section 3-16.

- 37. <u>Fees:</u> The permittee shall pay fees in accordance with Shelby County Code Sections 14.5-26 and 14.5-37.
- 38. <u>Property Rights:</u> This permit does not convey any property rights of any sort, or any exclusive privilege in accordance with Shelby County Code Section 3-5 [Reference Rules and Regulations of Tennessee, Rule 1200-3-9-.02(11)(e)1 (vi) (IV)].

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# Appendix A

# **Applicable Requirements**

# <u>Covoro Mining Solutions, LLC</u> Federal Requirement Applicability

CFR Part	Description	Applicable Req.	Notes
40 CFR 50.1 — 50.18	National Primary and Secondary Ambient Air Quality Standards	Yes	Contains general requirements
40 CFR 52.21	Prevention of Significant Deterioration of Air Quality	Yes	Contains general requirements for PSD sources. This facility is a major source of CO and $NO_x$
40 CFR 52.21 (Subpart RR)	Tennessee State Implementation Plant (SIP)	Yes	Contains agency requirements
40 CFR 54	Prior Notice of Citizen Suits	Yes	Contains general facility-wide requirements
40 CFR 60 (Subpart A)	Standards of Performance for New Stationary Sources: General Provisions	Yes	Contains general requirements
40 CFR 60 (Subpart Db)	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	Not Applicable (NA)	Boilers #3 and #4 have capacities greater than 100 MMBtu/hr; however, the installation dates were 1966 and 1976, respectively. No applicable requirements
40 CFR 60 (Subpart Dc)	Standards of Performance for Small Industrial-Commercial- Institutional Steam Generating Units	NA	Boilers #1 and #2 have capacities greater than 10 MMBtu/hr; however, the installation date for both units was 1951. No applicable requirements
40 CFR 60 (Subpart K)	Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after June 11, 1973, and prior to May 19, 1978 (see also Subparts Ka and Kb)	NA	Fuel oil tanks are out of service and had not previously been subject
40 CFR 60 (Subpart Ka)	Standards of Performance for Storage Vessels for Petroleum Liquid for which Construction, Reconstruction, or Modification Commenced after May 18, 1978, and prior to July 23, 1984	NA	No qualifying tanks > 40,000 gal
40 CFR 60 (Subpart Kb)	Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984	NA	No qualifying tanks ≥ 10,568 gal constructed, reconstructed or modified since July 23, 1984. No applicable requirements
40 CFR 60 (Subpart VV)	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification commenced after January 5, 1981, but before November 7, 2006.	NA	The only listed chemical is hydrogen cyanide. No qualifying construction or modification threshold exceeded since January 5, 1981. No applicable requirements

CFR Part	Description	Applicable Req.	Notes
40 CFR 60 (Subpart VVa)	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification commenced after November 7, 2006	NA	The only listed chemical is hydrogen cyanide. No qualifying construction or modification threshold exceeded since November 7, 2006. No applicable requirements
40 CFR 60 (Subpart III)	Standards of Performance for Volatile Organic Compound Emissions (VOC) from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	NA	The Hydrogen Cyanide Air Oxidation Reactors are covered under the rule but not have not exceeded the reconstruction or modification threshold since October 21, 1983. No applicable requirements
40 CFR 60 (Subpart NNN)	Standards of Performance for Volatile Organic Compound Emissions (VOC) from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations (see also Subpart DDD)	NA	No listed chemicals under the rule produced as a product, co-product, by-product, or intermediate
40 CFR 60 (Subpart RRR)	Standards of Performance for Volatile Organic Compound Emissions (VOC) from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes (see also Subpart DDD)	NA	No listed chemicals under the rule produced as a product, co-product, by-product, or intermediate
40 CFR 60 (Subpart IIII)	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	Yes	Applicable to certain facility engines
40 CFR 63 (Subpart A)	NESHAP: General Provisions	Yes	Contains specific requirements applicable to EU 1, 2, 3 and 4
40 CFR 63 (Subpart F)	National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry (This subpart, along with Subparts G, H, and I, is part of the Hazardous Organics NESHAP or HON)	Yes	The facility chooses to comply with §63.104(b) of subpart F for monitoring the AN Process Heat exchange system as required within Table 10 of subpart FFFF.
40 CFR 63 (Subpart G)	National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry Process Vents, Storage Vessels, Transfer Operations, and Wastewater (This subpart, along with Subparts F, H, and I, is part of the HON)	Yes	The facility chooses to comply with §63.138(i)(1) of subpart G for the AN Process (EU 1) Group 1 wastewater stream (AN-52 decant water) as required within Table 7 of subpart FFF. Subpart G is also applicable to HCN and Solid Cyanides Processes Group 2 wastewater streams as required within §63.1106 of subpart YY.
40 CFR 63 (Subpart SS)	National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process	Yes	Contains specific requirements applicable to Cyanide Manufacturing operations, EU 2 and 3, as referenced in Table 9 of subpart YY
40 CFR 63 (Subpart TT)	National Emission Standards for Equipment Leaks	Yes	Contains specific requirements applicable to Cyanide Manufacturing operations, EU 2 and 3, as referenced in Table 9 of subpart YY

CFR Part	Description	Applicable Req.	Notes
40 CFR 63 (Subpart UU)	National Emission Standards for Equipment Leaks - Control Level 2 Standards	Yes	The facility complies with the leak detection and repair requirements for the AN Process within §§63.1025 and 63.1026. as required within Table 6 of subpart FFFF.
40 CFR 63 (Subpart YY)	National Emission Standards for Hazardous Air Pollutants for Source Categories and Generic Maximum Achievable Control Technology Standards	Yes	Contains specific requirements applicable to Cyanide Manufacturing operations, EUs 2 and 3
40 CFR 63 (Subpart FFFF)	National Emission Standards for Hazardous Air Pollutant Emissions for Misc. Organic Chemical Manufacturing	Yes	Contains specific requirements applicable to EU 1
40 CFR 63 (Subpart ZZZZ)	National Emission Standards for Hazardous Air Pollutant Emissions for Reciprocating Internal Combustion Engines	Yes	Applicable to certain facility engines
40 CFR 63 (Subpart DDDDD)	National Emission Standards for Industrial/Commercial/Institutional Boilers and Process Heaters	Yes	Specific requirements applicable to combustion units in EUs 2, 3, and 4
40 CFR 68	Chemical Accident Prevention Provisions	Yes	Contains requirements to develop, submit, and maintain an up-to-date Risk Management Plan (RMP) and implementation of a Process Safety Management Program. Contains specific requirements applicable to EU 1, 2, and 3
40 CFR 70	State Operating Permit Programs	Yes	Contains general requirements for Title V major source operating permits. This facility is a Title V major source.
40 CFR 82 (Subpart A)	Protection of Stratospheric Ozone — Production and Consumption Controls	Yes	Contains general requirements
40 CFR 82 (Subpart B)	Servicing of Motor Vehicle Air Conditioners	Yes	Contains general requirements
40 CFR 82 (Subpart C)	Ban on Nonessential Products Containing Class I Substances and Ban on Nonessential Products Containing or Manufactured with Class II Substances	Yes	Contains general requirements
40 CFR 82 (Subpart D)	Federal Procurement	Yes	Contains general requirements
40 CFR 82 (Subpart E)	The Labeling of Products Using Ozone Depleting Substances	Yes	Contains general requirements
40 CFR 82 (Subpart F)	Recycling and Emissions Reduction	Yes	Contains specific applicable requirements regarding recovery and recycling of ozone depleting substances, refrigeration equipment servicing, leak repair, disposal, recordkeeping and notification requirements, and the prohibition of venting
40 CFR 98	Mandatory Greenhouse Gas Reporting	Yes	Not an applicable requirement; therefore not included in the Title V operating permit.

# Covoro Mining Solutions, LLC State and Local Requirement Applicability

TDEC/Shelby/Memphis	Description	Applicable Req.	Notes
CHAPTER 1200-3-2(3-1A)(16-46)	DEFINITIONS		
1200-3-201	General Definitions	Not Applicable (NA)	Defines terms used in chapter
1200-3-202	Abbreviations	NA	Defines abbreviations used in chapter
CHAPTER 1200-3-3(3-6)(16-49)	AMBIENT AIR QUALITY STANDARDS		
1200-3-301	Primary Air Quality Standard	Yes	Contains general requirements
1200-3-302	Secondary Air Quality Standard	Yes	Contains general requirements
1200-3-303	Tennessee's Ambient Air Quality Standard	Yes	Contains general requirements
1200-3-304	Nondegradation Standard	Yes	Contains general requirements
1200-3-305	Achievement	Yes	Contains general requirements
CHAPTER 1200-3-5(3-17)(16-83)	VISIBLE EMISSIONS		
1200-3-501	General Standards	Yes	Contains specific requirements applicable to facility-wide.
1200-3-502	Exceptions	Yes	Contains general requirements
1200-3-503	Method of Recording	Yes	Contains specific requirements applicable to facility-wide.
1200-3-504	Exemption	Yes	Contains specific requirements applicable to facility-wide.
CHAPTER 1200-3-6(3-21)(16-79)	NON-PROCESS EMISSION STANDARDS (PM)		
1200-3-601	General Non-Process Emissions	Yes	Contains general requirements
1200-3-602	Non-Process Particulate Emission Standards	Yes	Contains specific requirements for EU2, 3, and 4
CHAPTER 1200-3-7(3-20)(16-78)	PROCESS EMISSION STANDARDS (PM)		
1200-3-701	General Process Particulate Emission Standards	Yes	Contains general requirements
1200-3-702	Choice of Particulate Emission Standards	Yes	Contains specific requirements for EU3
1200-3-703	New Processes	Yes	Contains specific requirements for EU3
1200-3-704	Limiting Allowable Emissions	Yes	Contains specific requirements for EU3
1200-3-901	Construction Permits	Yes	Contains general requirements
1200-3-902	Operating Permits	Yes	Contains general requirements
1200-3-903	General Provisions	Yes	Contains general requirements
1200-3-904	Exemptions	Yes	Contains general requirements
1200-3-905	Appeal of Permit Application Denials and Permit Conditions	Yes	Contains general requirements

TDEC/Shelby/Memphis	Description	Applicable Req.	Notes
CHAPTER 1200-3-10(3-7)(16-85)	REQUIRED SAMPLING, RECORDING, AND REPORTING		
1200-3-1001	Sampling Required to Establish Air Contaminant Emissions Levels	Yes	Contains general requirements
1200-3-1002	Monitoring of Source Emissions, Recording and Reporting of Same are Required	Yes	Contains general requirements
1200-3-1004	Sampling, Recording and Reporting Required for Major Stationary Sources	Yes	Contains general requirements
CHAPTER 1200-3-11(3-25)(16-81)	HAZARDOUS AIR CONTAMINANTS	NA	
CHAPTER 1200-3-12(3-8)(16-86)	METHODS OF SAMPLING AND ANALYSIS		
1200-3-12.01	General	Yes	Contains general requirements
1200-3-1202	Procedures for Ambient Air Sampling and Analysis	Yes	Contains general requirements
1200-3-1203	Source Sampling and Analysis	Yes	Contains general requirements
CHAPTER 1200-3-14(3-24)(16-82)	SULFUR OXIDE EMISSIONS		
1200-3-1401	General Provisions	Yes	Contains general requirements
1200-3-14.02	Non-Process Emission Standards	Yes	Contains specific requirements for EU2, 3, and 4
CHAPTER 1200-3-15(3-14)(16-60) (96.02)	EMERGENCY EPISODE PLAN	NA	
CHAPTER 1200-3-16(3-15)(16-76)	NEW SOURCE PERFORMANCE STANDARDS		
1200-3-1659	Industrial-Commercial-Institutional Steam Generating Units	NA	Boilers on-site do not meet applicability requirements based on date of construction
CHAPTER 1200-3-18(3-22)(16-80)	VOLATILE ORGANIC COMPOUNDS		
1200-3-1801	Definitions	NA	Defines terms used in chapter
1200-3-1802	General Provisions and Applicability	Yes	Contains general requirements
1200-3-1804	Compliance Certification, Record Keeping, and Reporting Requirements for Non-Coating and Non-Printing Sources	Yes	Contains specific requirements
1200-3-1806	Handling, Storage, and Disposal of Volatile Organic Compounds (VOCs)	Yes	Contains general requirements
1200-3-1838	Leaks from Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment	Yes	HCN Process applicability only, MACT requirements take precedence
1200-3-1840	Air Oxidation Processes in the Synthetic Organic Chemical Manufacturing Industry	Yes	HCN Process applicability only, MACT requirements take precedence
1200-3-1880	Test Methods and Compliance Procedures: General Provisions	Yes	Contains general requirements

TDEC/Shelby/Memphis	Description	Applicable Req.	Notes
1200-3-1883	Test Methods and Compliance Procedures: Emission Capture and Destruction of Removal Efficiency and Monitoring Requirements	Yes	Contains specific requirements for affected facility
1200-3-1884	Test Methods and Compliance Procedures: Determining the Destruction or Removal Efficiency of a Control Device	Yes	Contains specific requirements for affected facility
1200-3-1885	Test Methods and Compliance Procedures: Leak Detection Methods for VOCs	Yes	Contains specific requirements for affected facility
CHAPTER 1200-3-20(3-9)(16-87)	LIMITS ON EMISSIONS DUE TO MALFUNCTIONS, STARTUPS, AND SHUTDOWNS		
1200-3-2001	Purpose	Yes	Contains general requirements
1200-3-2002	Reasonable Measures Required	Yes	Contains general requirements
1200-3-2003	Notice Required When Malfunction Occurs	Yes	Contains general requirements
1200-3-2004	Logs and Reports	Yes	Contains general requirements
1200-3-2005	Copies of Logs Required	Yes	Contains general requirements
1200-3-2006	Report Required Upon the Issuance of a Notice of Violation	Yes	Contains general requirements
1200-3-2007	Special Reports Required	Yes	Contains general requirements
1200-3-2008	Rights Reserved	Yes	Contains general requirements
1200-3-2009	Additional Sources Covered	Yes	Contains general requirements
CHAPTER 1200-3-21(3-28)(16-90)	GENERAL ALTERNATE EMISSION STANDARDS	NA	
CHAPTER 1200-3-22(3-29)(16-91)	LEAD EMISSION STANDARDS	NA	
CHAPTER 1200-3-24(3-40)(16-52)	GOOD ENGINEERING PRACTICE STACK HEIGHT REGULATIONS		
1200-3-2401	General Provisions	Yes	Contains general requirements
1200-3-2402	Definitions	Yes	Contains general requirements
1200-3-2403	Good Engineering Practice Stack Height Standards	Yes	Contains general requirements
1200-3-2404	Specific Emission Standards	Yes	Contains general requirements
CHAPTER 1200-3-25(3-39)(16-91.1)	STANDARDS FOR INFECTIOUS WASTE INCINERATORS	NA	
CHAPTER 1200-3-30(3-36)(16-91.2)	ACIDIC PRECIPITAION CONTROL	NA	
CHAPTER 1200-3-31(3-37)(16.91.3)	CASE BY CASE DETERMINATIONS OF HAZARDOUS AIR POLLUTANT CONTROL REQUIREMENTS	NA	
CHAPTER 1200-3-32(3-38)(16-91.4)	PREVENTION OF ACCIDENTAL RELEASES	NA	
OTHER (LOCAL ONLY)			
TDEC/Shelby/Memphis	Description	Applicable Req.	Notes
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(3-3)(16-57)	Penalties - Misdemeanor, Civil, and Noncompliance	Yes	Contains general requirements
(3-4)(16-59)	Enforcement - Emergency Powers of Health Officer	Yes	Contains general requirements
(3-10)(16-58)	Enforcement - Variances	Yes	Contains general requirements
(3-11)(16-51)	Severability	Yes	Contains general requirements
(3-12)(16-48)	Words, Phrases Substituted in State Regulations Adopted by Reference	Yes	Contains general requirements
(3-13)(16-61)	Right Of Entry	Yes	Contains general requirements
(3-16)(16-50)	Open Burning	Yes	Contains general requirements
(3-18)(16-89)	Fugitive Dust	Yes	Contains general requirements
(3-19)(16-88)	Nuisance Abatement	Yes	Contains general requirements
(3-35)(16-71)	Created; Membership; Term of Office; Jurisdiction; Hearings; Appeals	Yes	Contains general requirements
(14.5-27-28, 30-32, 34-36)(16-93 thru100)	Permits and Fees (Various)	Yes	Contains general requirements
(14.5-35)(16-101)	Penalty Provisions	Yes	Contains general requirements
(14.5-36)(16-102)	Annual Review of Fee Structure and Financial Need	Yes	Contains general requirements

# Appendix B

**Insignificant Activities** 

Activities which are insignificant based on potential to emit of < 5 tons/yr of a regulated pollutant or potential to emit of < 1,000 lb/yr of a Hazardous Air Pollutant:

Description	Potential-to-emit		
Ketone Storage Tanks (Tanks 55 and 56)	< 5 tons/yr VOC emitted		
Wastewater Truck Loading	< 5 tons/yr VOC, < 1,000 lb/yr HAP emitted		
Vent Sodium Cyanide Recycle Tank (EP-96)	< 1,000 lb/yr HAP emitted		
Methanol Brine Tank (EP-18)	< 1,000 lb/yr HAP emitted		
Methanol Brine Tank (EP-110A)	< 1,000 lb/yr HAP emitted		
Methanol Brine Tank (EP-110E)	< 1,000 lb/yr HAP emitted		
Portable Additive Tank	No VOC or HAP emitted		
Analyzer Vents	No VOC or HAP emitted		
Washwater Accumulation Building Vents	< 5 tons/yr VOC, < 1,000 lb/yr HAP emitted		
Tank Truck Loading Spots	< 5 tons/yr VOC, < 1,000 lb/yr HAP emitted		
Washwater Storage Tanks	< 5 tons/yr VOC, < 1,000 lb/yr HAP emitted		
Air Tanks	No VOC or HAP emitted		
Hydrogen Tank	No VOC or HAP emitted		
Arkema Equipment in Power Area under separate Title V with Shelby County APC			
Nitrogen Tank	No VOC or HAP emitted		

 TABLE B-1

 (1200-03-09-.04(5)(a)(4)(i) Insignificant Activities)

## **Categorically Exempt Activities**

Activities which are <u>categorically exempted</u> from Title V permitting (not included in permit):

The categorical list of insignificant activities and insignificant emission units for the Power Area, as well as for other "site-wide" maintenance, construction and general support activities, as described in Shelby County Code 3-5, Reference 1200-3-9-.04(5)(f), has not been included, as allowed by the rule. This information is on file and available upon request. All items used from this list also meet the requirements of 1200-3-9-.04(5)(a)(4)(i).

Activities which are considered insignificant due to size or production rate based on maximum rated capacity:

Source Description	Regulatory Basis		
Boiler Water Treatment Tank - 1,550 gal	1200-03-0904(5)(g)(45) : Boiler water treatment operations, not including cooling towers.		
Boiler Water Treatment Tank - 1,550 gal	1200-03-0904(5)(g)(45) : Boiler water treatment operations, not including cooling towers.		
CT Treatment Tank - 1,550 gal	1200-03-0904(5)(g)(45) : Boiler water treatment operations, not including cooling towers.		
Caustic Tank – Not in service - 500 gal	1200-03-0904(5)(g)(20): Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP.		
Waste Oil Tank - 500 gal (EPN 516)	1200-03-0904(5)(g)(20): Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP.		
Site Portable Fuel Oil Tanks - < 1,000 gal	1200-03-0904(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks		
Site Portable Gasoline Tanks - < 200 gal	1200-03-0904(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks		
Site Diesel Tank (Fueling Station) - 5,200 gal	1200-03-0904(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks,		
Site Gas Tank (Fueling station) - 5,200 gal	1200-03-0904(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks		
MMA Fire Pumps Diesel Tanks - Two 500 gal	1200-03-0904(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks		
ACRN Fire Pump Diesel Tank - 500 gal	1200-03-0904(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks		
Construction Portable Fuel Oil Tank - 500 gal	1200-03-0904(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks		
Solid Cyanides Portable Gasoline Tank - 300 gal	1200-03-0904(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks		

 TABLE B-2

 (1200-03-09-.04(5)(a)(4)(iii) Size or Production Rate Insignificant Activities)

Other "site-wide" activities, not just limited to the Power Area, which are also considered insignificant due to size or production rate based on maximum rated capacity:

 Table B-3

 (1200-03-09-.04(5)(a)(4)(iii) Other Size or Production Rate Insignificant Activities

Source Description	Regulatory Basis
Multiple maintenance and repair degreasing stations routinely serviced under contract	1200-3-904(5)(d)(15)
Power Area IC Engine Electrical Generator (non- stationary)	1200-3-904(5)(a)4(i) emissions unit or activity has a potential to emit less than 5 tons per year of any regulated air pollutant that is not a hazardous air pollutant, and less than 1,000 pounds per year of each HAP
Power Area IC Engine Electrical Generator (non- stationary) (January 28, 2020 letter)	1200-3-904(5)(a)4(i) emissions unit or activity has a potential to emit less than 5 tons per year of any regulated air pollutant that is not a hazardous air pollutant, and less than 1,000 pounds per year of each HAP
One or more portable or trailered air compressors staged on site for back-up or to supplement compressed air needs in the Power or other process areas.	1200-3-904(5)(a)4(i) emissions unit or activity has a potential to emit less than 5 tons per year of any regulated air pollutant that is not a hazardous air pollutant, and less than 1,000 pounds per year of each HAP
Diesel IC Engine Powered Supplemental HVAC Unit(s) – leased as needed for personnel comfort (heat stress avoidance) or equipment cooling	1200-3-904(5)(a)4(i) emissions unit or activity has a potential to emit less than 5 tons per year of any regulated air pollutant that is not a hazardous air pollutant, and less than 1,000 pounds per year of each HAP
General metal machine work and pipe threading	1200-3-904(5)(d)18; (f)45, 54; (g)16
Small metal parts heat treating	1200-3-904(5)(d)20; (f)27

Tank Identification	Materials Stored	Tank Capacity (Gallons)	Type of Tank
204B	Fuel Oil – removed from service <sup>1</sup>	200,000	Fixed Roof
203	Fuel Oil – removed from service <sup>1</sup>	25,000	Fixed Roof
FAA 471-668-14	Sulfuric Acid - removed from service <sup>(1)</sup>	130	Fixed Roof
FAA 451-564-12	Air	29,000	Fixed Roof
FAA 451-564-01	Hydrogen - Arkema	29,000	Fixed Roof
FAA 451-564-02	Nitrogen	29,000	Fixed Roof
FAA 451-564-03	Air	29,000	Fixed Roof
N 99392	Boiler Feedwater Treatment Chemicals	1,550	Fixed Roof
N 99393	Boiler Feedwater Treatment Chemicals	1,550	Fixed Roof
N 99391	Cooling Tower Treatment Chemicals	1,550	Fixed Roof
P - 21	Fuel Oil – removed from service <sup>1</sup>	500	Fixed Roof
MP 15195	Caustic – removed from service <sup>1</sup>	500	Fixed Roof
P - 20	Waste Oil	500	Fixed Roof
Site Gas Tank [vault]	Unleaded Gasoline	5,200	Fixed Roof
Site Diesel Tank [vault]	Diesel Fuel	5,200	Fixed Roof
MMA Fire Pumps Diesel Fuel Tanks-2	Diesel Fuel	500	Fixed Roof
ACRN Fire Pump Diesel Fuel Tank	Diesel Fuel	500	Fixed Roof
Power Area IC Engine Electrical Generator Diesel Fuel Tank	Diesel Fuel	400	Fixed Roof
Power Portable Fuel Oil Tank	Diesel Fuel	1,000	Fixed Roof
Construction Portable Fuel Oil Tank	Diesel Fuel	500	Fixed Roof
Solid Cyanides Portable Gas Tank	Unleaded Gasoline	300	Fixed Roof
Site Portable Diesel Tanks	Diesel Fuel	<1,000	Fixed Roof
Site Portable Gasoline Tanks	Unleaded Gasoline	<200	Fixed Roof

 TABLE B-4

 (Summary of Storage Tanks – Power & Other Areas)

<sup>1</sup> In place, out of service

#### General

#### Minor Parts Cleaning

Previously referenced, the plant uses several "Safety-Kleen" type or equivalent small parts cleaning stations at various locations around the plant for routine maintenance. The solvent metal cleaning exemption specified in 1200-3-18-31 applies to the Memphis site. Records of solvent used to demonstrate compliance with the exemption limits.

#### Gasoline Dispensing

The gasoline dispensing facility for the Memphis plant consists of a 5,200 gallon above ground gasoline storage tank (steel/concrete vault). The site maintains records of gasoline usage to demonstrate less than 10,000 gallons of gasoline per month of use. Records indicating "Submerged Fill Pipe" are also maintained.

#### **Refrigeration Equipment**

The site has refrigeration equipment and service subject to Title VI requirements, including equipment with  $\geq$ 50 lb refrigerant charge. The site currently uses a dedicated contractor for all refrigeration unit repairs, leak management, and general preventative and corrective service.

# Appendix C

**Equations** 

#### Equation 1:

$$V\left(\frac{ft^{3}}{\min.}\right) = \min \left\{ \begin{bmatrix} \left(\frac{543.62\left(\frac{lbs}{hr}\right) - \sum_{i=102-105,110} m_{i}CO\left(\frac{lbs}{hr}\right)\right) - 35.9378\left(\frac{lbs}{hr}\right)}{0.0371198}\right], \begin{bmatrix} \left(\frac{40.28\left(\frac{lbs}{hr}\right) - \sum_{i=102-105,110} m_{i}TSP\left(\frac{lbs}{hr}\right)\right) - 2.582119\left(\frac{lbs}{hr}\right)}{0.0026678}\right], \\ V\left(\frac{ft^{3}}{\min.}\right) = \min \left\{ \begin{bmatrix} \left(\frac{5.63\left(\frac{lbs}{hr}\right) - \sum_{i=102-105,110} m_{i}SO_{2}\left(\frac{lbs}{hr}\right)\right) - 0.35298\left(\frac{lbs}{hr}\right)}{0.000359986}\right], \begin{bmatrix} \left(\frac{316.4\left(\frac{lbs}{hr}\right) - \sum_{i=102-105,110} m_{i}NO_{x}\left(\frac{lbs}{hr}\right)\right) - 7.2959\left(\frac{lbs}{hr}\right)}{0.012358}\right], \\ \begin{bmatrix} \left(\frac{246.61\left(\frac{lbs}{hr}\right) - \sum_{i=102-105,110} m_{i}VOC\left(\frac{lbs}{hr}\right)\right)}{0.016383}\right] \end{bmatrix}$$

Where 
$$\sum_{i=102-105,110} m_i CO\left(\frac{lbs}{hr}\right) = (m_{102} + m_{103} + m_{104} + m_{105} + m_{110})\left(\frac{lbs}{hr}\right)$$

Is the summation of hourly CO emission rates for emission points 102 through 105 and 110

$$\sum_{i=102-105,110} m_i TSP\left(\frac{lbs}{hr}\right) = (m_{102} + m_{103} + m_{104} + m_{105} + m_{110})\left(\frac{lbs}{hr}\right)$$

Is the summation of hourly TSP emission rates for emission points 102 through 105 and 110

$$\sum_{i=102-105,110} m_i SO_2\left(\frac{lbs}{hr}\right) = (m_{102} + m_{103} + m_{104} + m_{105} + m_{110})\left(\frac{lbs}{hr}\right)$$

Is the summation of hourly SO<sub>2</sub> emission rates for emission points 102 through 105 and 110

$$\sum_{i=102-105,110} m_i NO_x \left(\frac{lbs}{hr}\right) = (m_{102} + m_{103} + m_{104} + m_{105} + m_{110}) \left(\frac{lbs}{hr}\right)$$

Is the summation of hourly NO<sub>x</sub> emission rates for emission points 102 through 105 and 110

$$\sum_{i=102-105,110} m_i VOC\left(\frac{lbs}{hr}\right) = (m_{102} + m_{103} + m_{104} + m_{105} + m_{110})\left(\frac{lbs}{hr}\right)$$

Is the summation of hourly VOC emission rates for emission points 102 through 105 and 110

#### Equation 2a:

$$N\left(\frac{startups}{year}\right) = \min\left\{ \begin{bmatrix} 286.9\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_i CO\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2,000lbs}{1ton} + 72.9188 \cdot S_1 - E_1 \cdot (0.138 \cdot V + 0.9233) - 15,566 \cdot E_2}{0.0228438 \cdot V + 73.124} \right], \\ N\left(\frac{startups}{year}\right) = \min\left\{ \begin{bmatrix} 12.4\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_i TSP\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2,000lbs}{1ton} + 2.33244681 \cdot S_1 - E_1 \cdot (0.0044152 \cdot V + 0.02953) - 498 \cdot E_2}{0.000730894 \cdot V + 2.33900978} \right], \\ N\left(\frac{startups}{year}\right) = \min\left\{ \begin{bmatrix} 4.0\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_i SO_2\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2,000lbs}{1ton} + 0.66338074 \cdot S_1 - E_1 \cdot (0.001255752 \cdot V + 0.0083997) - 141.5 \cdot E_2}{0.0002078753 \cdot V + 0.66524734} \right], \\ \begin{bmatrix} 350.0\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_i NO_i\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2,000lbs}{1ton} + 16.5845134 \cdot S_1 - E_1 \cdot (0.06570957 \cdot V + 0.107684) - 2,009.5 \cdot E_2}{0.00603395 \cdot V + 16.608443} \right], \\ \begin{bmatrix} 15.0\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_i NO_i\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2,000lbs}{1ton} - 0.16839 \cdot V \cdot E_1}{0.00235 \cdot V} \right]$$

Where: 
$$\sum_{i=102-107,110} m_i CO\left(\frac{tons}{year}\right) = (m_{102} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110})\left(\frac{tons}{year}\right)$$

Is the summation of annual CO emission rates for emission points 102 through 107 and 110

$$\sum_{i=102-107,110} m_i TSP\left(\frac{tons}{year}\right) = (m_{102} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110})\left(\frac{tons}{year}\right)$$

Is the summation of annual TSP emission rates for emission points 102 through 107 and 110

$$\sum_{i=102-107,110} m_i SO_2\left(\frac{tons}{year}\right) = (m_{102} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110})\left(\frac{tons}{year}\right)$$

Is the summation of annual SO<sub>2</sub> emission rates for emission points 102 through 107 and 110

$$\sum_{i=102-107,110} m_i NO_x \left(\frac{tons}{year}\right) = (m_{102} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110}) \left(\frac{tons}{year}\right)$$

Is the summation of annual NO<sub>x</sub> emission rates for emission points 102 through 107 and 110

$$\sum_{i=102-107,110} m_i VOC\left(\frac{tons}{year}\right) = (m_{102} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110})\left(\frac{tons}{year}\right)$$

Is the summation of annual VOC emission rates for emission points 102 through 107 and 110

- N = number of startups per year
- $S_1$  = number of shutdowns per year without emptying the vaporizer
- $S_2$  = number of events of emptying vaporizer per year
- $E_1$  = number of events of flaring of converters for maintenance per year
- $E_2$  = number of events of de-inventorying of the NH<sub>3</sub> pipeline and supply system per year
- V = total gas flow into a converters in scfm

### Equation 2b:

$$N\left(\frac{startups}{year}\right) = \min\left\{ \begin{bmatrix} \frac{286.9\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_i CO\left(\frac{tons}{year}\right) \end{bmatrix} \bullet \frac{2.000 lbs}{1ton} - 72.9188 \bullet S_2 - E_1 \bullet (0.138 \bullet V + 0.9233) - 15,566 \bullet E_2}{0.0228438 \bullet V + 0.2052} \right], \\ N\left(\frac{startups}{year}\right) - \sum_{i=102-107,110} m_i TSP\left(\frac{tons}{year}\right) \end{bmatrix} \bullet \frac{2.000 lbs}{1ton} - 2.33244681 \bullet S_2 - E_1 \bullet (0.0044152 \bullet V + 0.02953) - 498 \bullet E_2}{0.000730894 \bullet V + 0.00656297} \right], \\ N\left(\frac{startups}{year}\right) = \min\left\{ \begin{bmatrix} 4.0\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_i SO_2\left(\frac{tons}{year}\right) \end{bmatrix} \bullet \frac{2.000 lbs}{1ton} - 0.66338074 \bullet S_2 - E_1 \bullet (0.001255752 \bullet V + 0.0083997) - 141.5 \bullet E_2}{0.0002078753 \bullet V + 0.0018666} \right], \\ \left[ \begin{bmatrix} 350.0\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_i NO_3\left(\frac{tons}{year}\right) \end{bmatrix} \bullet \frac{2.000 lbs}{1ton} - 16.5845134 \bullet S_2 - E_1 \bullet (0.06570957 \bullet V + 0.107684) - 2.009.5 \bullet E_2}{0.00063395 \bullet V + 0.0239296} \right], \\ \left[ \begin{bmatrix} 15.0\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_i NO_3\left(\frac{tons}{year}\right) \end{bmatrix} \bullet \frac{2.000 lbs}{1ton} - 0.16839 \bullet V \bullet E_1}{0.00235 \bullet V} \right] \right\}$$

### Equation 3a:

$$E_{i}\left(\frac{events}{year}\right) = \min\left\{ \begin{bmatrix} 286.9 \left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}CO\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2.000 lbs}{lton} + 72.9188 \cdot S_{i} - N \cdot (0.0228438 \cdot V + 73.124) - 15,566 \cdot E_{2} \\ 0.138 \cdot V + 0.9233 \end{bmatrix}, \\ E_{i}\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}TSP\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2.000 lbs}{lton} + 2.33244681 \cdot S_{1} - N \cdot (0.000730894 \cdot V + 2.33900978) - 498 \cdot E_{2} \\ 0.0044152 \cdot V + 0.02953 \end{bmatrix}, \\ E_{i}\left(\frac{events}{year}\right) - \sum_{i=102-107,110} m_{i}SO_{2}\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2.000 lbs}{lton} + 0.66338074 \cdot S_{1} - N \cdot (0.0002078753 \cdot V + 0.66524734) - 141.5 \cdot E_{2} \\ 0.001255752 \cdot V + 0.0083997 \end{bmatrix}, \\ \left[ \frac{\left[ 3500\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}SO_{2}\left(\frac{tons}{year}\right) \right] \cdot \frac{2.000 lbs}{lton} + 16.5845134 \cdot S_{1} - N \cdot (0.00603395 \cdot V + 16.608443) - 2,009.5 \cdot E_{2} \\ 0.06570957 \cdot V + 0.107684 \end{bmatrix}, \\ \left[ \frac{\left[ 15.0\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}VOC\left(\frac{tons}{year}\right) \right] \cdot \frac{2,000 lbs}{lton} - 0.00235 \cdot V \cdot N \\ 0.16839 \cdot V \end{bmatrix} \right]$$

### Equation 3b:

$$E_{l}\left(\frac{events}{year}\right) = \min\left\{ \begin{bmatrix} \frac{1}{286.9} \left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}CO\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2.000lbs}{1ton} - 72.9188 \cdot S_{2} - N \cdot (0.0228438 \cdot V + 0.2052) - 15,566 \cdot E_{2} \\ 0.138 \cdot V + 0.9233 \end{bmatrix} \right\},$$

$$E_{l}\left(\frac{events}{year}\right) = \min\left\{ \begin{bmatrix} \frac{1}{2.4\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}TSP\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2.000lbs}{1ton} - 2.33244681 \cdot S_{2} - N \cdot (0.000730894 \cdot V + 0.00656297) - 498 \cdot E_{2} \\ 0.0044152 \cdot V + 0.02953 \end{bmatrix} \right\},$$

$$E_{l}\left(\frac{events}{year}\right) = \min\left\{ \begin{bmatrix} \frac{4.0\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}SO_{2}\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2.000lbs}{1ton} - 0.66338074 \cdot S_{2} - N \cdot (0.0002078753 \cdot V + 0.0018666) - 141.5 \cdot E_{2} \\ 0.001255752 \cdot V + 0.0083997 \end{bmatrix} \right\},$$

$$E_{l}\left(\frac{5000lbs}{year}\right) - \sum_{i=102-107,110} m_{i}SO_{2}\left(\frac{tons}{year}\right) + \frac{2.000lbs}{1ton} - 16.5845134 \cdot S_{2} - N \cdot (0.00603395 \cdot V + 0.0239296) - 2.009.5 \cdot E_{2} \\ 0.06570957 \cdot V + 0.107684 \end{bmatrix} \right\},$$

### Equation 4a:

$$E_{2}\left(\frac{events}{year}\right) = \min\left[\frac{\left[2869\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}CO\left(\frac{tons}{year}\right)\right] \bullet \frac{2,000lbs}{lton} + 72.9188 \bullet S_{1} - N \bullet (0.0228438 \bullet V + 73.124) - E_{1} \bullet (0.138 \bullet V + 0.9233)}{15,566}\right],$$

$$E_{2}\left(\frac{events}{year}\right) = \min\left[\frac{\left[12.4\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}TSP\left(\frac{tons}{year}\right)\right] \bullet \frac{2,000lbs}{lton} + 2.33244681 \bullet S_{1} - N \bullet (0.000730894 \bullet V + 2.33900978) - E_{1} \bullet (0.0044152 \bullet V + 0.02953)}{498}\right],$$

$$E_{2}\left(\frac{events}{year}\right) = \min\left[\frac{\left[4.0\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}SO_{2}\left(\frac{tons}{year}\right)\right] \bullet \frac{2,000lbs}{lton} + 0.66338074 \bullet S_{1} - N \bullet (0.0002078753 \bullet V + 0.66524734) - E_{1} \bullet (0.001255752 \bullet V + 0.0083997)}{141.5}\right],$$

$$I=102-107,110 + O_{2}\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}SO_{2}\left(\frac{tons}{year}\right)\right] \bullet \frac{2,000lbs}{lton} + 16.5845134 \bullet S_{1} - N \bullet (0.00603395 \bullet V + 16.608443) - E_{1} \bullet (0.06570957 \bullet V + 0.107684)}{2,009.5}\right]$$

#### Equation 4b:

$$E_{2}\left(\frac{events}{year}\right) = \min\left\{ \begin{bmatrix} 286.9\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}CO\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2,000lbs}{1ton} - 72.9188 \cdot S_{2} - N \cdot (0.0228438 \cdot V + 0.2052) - E_{1} \cdot (0.138 \cdot V + 0.9233) \\ 15,566 \end{bmatrix}, \\ E_{2}\left(\frac{events}{year}\right) = \min\left\{ \begin{bmatrix} 12.4\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}TSP\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2,000lbs}{1ton} - 2.33244681 \cdot S_{2} - N \cdot (0.000730894 \cdot V + 0.00656297) - E_{1} \cdot (0.0044152 \cdot V + 0.02953) \\ 498 \end{bmatrix}, \\ E_{2}\left(\frac{events}{year}\right) - \sum_{i=102-107,110} m_{i}SO_{2}\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2,000lbs}{1ton} - 0.66338074 \cdot S_{2} - N \cdot (0.0002078753 \cdot V + 0.0018666) - E_{1} \cdot (0.001255752 \cdot V + 0.0083997) \\ 141.5 \\ \begin{bmatrix} 350.0\left(\frac{tons}{year}\right) - \sum_{i=102-107,110} m_{i}NO_{4}\left(\frac{tons}{year}\right) \end{bmatrix} \cdot \frac{2,000lbs}{1ton} - 16.5845134 \cdot S_{2} - N \cdot (0.00603395 \cdot V + 0.0239296) - E_{1} \cdot (0.06570957 \cdot V + 0.107684) \\ 2,009.5 \end{bmatrix} \right\}$$

$$V\left(\frac{scf}{yr}\right) = \min\left\{ \begin{array}{l} \left[ \left\{ 286.9 \left( \frac{tons}{year} \right) - \sum_{i=101,103-107,110} m_i CO\left( \frac{tons}{year} \right) \right\} \bullet \frac{2000 bs}{1ton} - m_{102b} \left( \frac{lbs}{year} \right) - m_{102c} \left( \frac{lbs}{year} \right) \right\} \bullet T - 0.076941 \bullet \left(T^2 - T \bullet T_1\right) \right] \\ 0.0000516624 \bullet \left(T - T_1\right) \\ 0.0000016522 \bullet \left(T - T_1\right) \\ 0.0000016522 \bullet \left(T - T_1\right) \\ 0.00000016522 \bullet \left(T - T_1\right) \\ 0.00000047 \bullet \left(T - T_1\right) \\ 0.00000047 \bullet \left(T - T_1\right) \\ 0.00000047 \bullet \left(T - T_1\right) \\ 0.000000662 + 0.000000128 \bullet C\right) \bullet \left(T - 0.008974 \bullet \left(T^2 - T \bullet T_1\right) \right] \\ \left[ \left\{ \left[ 15.0 \left( \frac{tons}{year} \right) - \sum_{i=101,103-107,110} m_i NO_s \left( \frac{tons}{year} \right) \right] \bullet \frac{2,000 lbs}{1ton} - m_{102b} \left( \frac{lbs}{year} \right) - m_{102c} \left( \frac{lbs}{year} \right) \right\} \bullet T - 0.008974 \bullet \left(T^2 - T \bullet T_1\right) \\ \\ \left[ \left\{ \left[ 15.0 \left( \frac{tons}{year} \right) - \sum_{i=101,103-107,110} m_i NO_s \left( \frac{tons}{year} \right) \right] \bullet \frac{2,000 lbs}{1ton} - m_{102b} \left( \frac{lbs}{year} \right) - m_{102c} \left( \frac{lbs}{year} \right) \right\} \bullet T - 0.008974 \bullet \left(T^2 - T \bullet T_1\right) \\ \\ \\ \left[ \left\{ \left[ 15.0 \left( \frac{tons}{year} \right) - \sum_{i=101,103-107,110} m_i NO_s \left( \frac{tons}{year} \right) \right] \bullet \frac{2,000 lbs}{ton} - m_{102b} \left( \frac{lbs}{year} \right) - m_{102c} \left( \frac{lbs}{year} \right) \right\} \bullet T - 0.008974 \bullet \left(T^2 - T \bullet T_1\right) \\ \\ \\ \\ \\ \left[ \left\{ \left[ 15.0 \left( \frac{tons}{year} \right) - \sum_{i=101,103-107,110} m_i NO_s \left( \frac{tons}{year} \right) \right] \bullet \frac{2,000 lbs}{ton} - m_{102b} \left( \frac{lbs}{year} \right) - m_{102c} \left( \frac{lbs}{year} \right) \right\} \bullet T \\ \\ \\ \\ \\ \\ \\ \\ \end{array} \right] \right\}$$

Where

$$\sum_{i=101,103-107,110} \left(\frac{tons}{year}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110}) \left(\frac{tons}{year}\right)$$

Is the summation of annual CO emission rates for emission points 101 and 103 through 110

$$\sum_{i=101,103-107,110} m_i TSP\left(\frac{tons}{year}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110})\left(\frac{tons}{year}\right)$$

Is the summation of annual TSP emission rates for emission points 101 and 103 through 110

$$\sum_{i=101,103-107,110} m_i SO_2\left(\frac{tons}{year}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110})\left(\frac{tons}{year}\right)$$

Is the summation of annual SO<sub>2</sub> emission rates for emission points 101 and 103 through 110

$$\sum_{i=101,103-107,110} m_i NO_x \left(\frac{tons}{year}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110}) \left(\frac{tons}{year}\right)$$

Is the summation of annual NO<sub>x</sub> emission rates for emission points 101 and 103 through 110  $\sum_{i=101,103-107,110} m_i TSP\left(\frac{tons}{year}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110})\left(\frac{tons}{year}\right)$ 

Is the summation of annual TSP emission rates for emission points 101 and 103 through 110

 $\underline{m_{102b}}$  = annual emissions from flaring all AOG step of the run flare

 $\underline{m_{102c}}$  = annual emissions from flaring converter off-gas through EP-75 without water absorption step of the run flare

T = total operating hours of the run flare

 $T_1$  = total hours of flaring all AOG of the run flare and flaring AOG through EP-75 without water absorption

 $C = concentration of NO_x$  in the absorber offgas

### Equation 5a:

$$V\left(\frac{scf}{yr}\right) = \min\left\{ \begin{array}{l} \left[ \frac{\left\{ 286.9 \left(\frac{tons}{year}\right) - \sum_{i=101,035-107,110} m_i CO\left(\frac{tons}{year}\right)\right\} \bullet \frac{2000 lbs}{lton} - m_{102b} \left(\frac{lbs}{year}\right) - m_{102c} \left(\frac{lbs}{year}\right)\right\} \bullet T - 0.076941 \bullet \left(T^2 - T \bullet T_1\right)}{0.0000516624 \bullet \left(T - T_1\right)} \right] \right] \\ V\left(\frac{scf}{yr}\right) = \min\left\{ \begin{array}{l} \left[ \frac{\left\{ \left[ 12.4 \left(\frac{tons}{year}\right) - \sum_{i=101,103-107,110} m_i TSP\left(\frac{tons}{year}\right)\right] \bullet \frac{2,000 lbs}{lton} - m_{102b} \left(\frac{lbs}{year}\right) - m_{102c} \left(\frac{lbs}{year}\right)\right\} \bullet T - 0.0024611 \bullet \left(T^2 - T \bullet T_1\right)}{0.0000016522 \bullet \left(T - T_1\right)} \right] \right] \\ 0.0000016522 \bullet \left(T - T_1\right) \\ 0.00000016522 \bullet \left(T - T_1\right) \\ 0.00000047 \bullet \left(T - T_1\right) \\ 0.00000047 \bullet \left(T - T_1\right) \\ \left[ \frac{\left\{ \left[ 350.0 \left(\frac{tons}{year}\right) - \sum_{i=101,103-107,110} m_i NO_s \left(\frac{tons}{year}\right)\right] \bullet \frac{2,000 lbs}{lton} - m_{102b} \left(\frac{lbs}{year}\right) - m_{102c} \left(\frac{lbs}{year}\right) \right\} \bullet T - 0.008974 \bullet \left(T^2 - T \bullet T_1\right) \\ \left[ \frac{\left\{ \left[ 350.0 \left(\frac{tons}{year}\right) - \sum_{i=101,103-107,110} m_i NO_s \left(\frac{tons}{year}\right)\right] \bullet \frac{2,000 lbs}{lton} - m_{102b} \left(\frac{lbs}{year}\right) - m_{102c} \left(\frac{lbs}{year}\right) \right\} \bullet T - 0.008974 \bullet \left(T^2 - T \bullet T_1\right) \\ \left[ \frac{\left\{ \left[ 15.0 \left(\frac{tons}{year}\right) - \sum_{i=101,103-107,110} m_i NO_s \left(\frac{tons}{year}\right)\right] \bullet \frac{2,000 lbs}{ton} - m_{102b} \left(\frac{lbs}{year}\right) - m_{102c} \left(\frac{lbs}{year}\right) \right\} \bullet T - 0.008974 \bullet \left(T^2 - T \bullet T_1\right) \\ \left[ \frac{\left\{ \left[ 15.0 \left(\frac{tons}{year}\right) - \sum_{i=101,103-107,110} m_i NO_s \left(\frac{tons}{year}\right)\right] \bullet \frac{2,000 lbs}{ton} - m_{102b} \left(\frac{lbs}{year}\right) - m_{102c} \left(\frac{lbs}{year}\right) \right\} \bullet T - 0.008974 \bullet \left(T^2 - T \bullet T_1\right) \\ \left[ \frac{\left\{ \left[ 15.0 \left(\frac{tons}{year}\right) - \sum_{i=101,103-107,110} m_i NO_s \left(\frac{tons}{year}\right)\right] \bullet \frac{2,000 lbs}{ton} - m_{102b} \left(\frac{lbs}{year}\right) - m_{102c} \left(\frac{lbs}{year}\right) \right\} \bullet T \right] \\ \left[ \frac{\left\{ \left[ 15.0 \left(\frac{tons}{year}\right) - \sum_{i=101,103-107,110} m_i NO_s \left(\frac{tons}{year}\right)\right] \bullet \frac{2,000 lbs}{ton} - m_{102b} \left(\frac{lbs}{year}\right) - m_{102c} \left(\frac{lbs}{year}\right) \right\} \bullet T \right] \\ \left[ \frac{\left\{ \left[ 15.0 \left(\frac{tons}{year}\right) - \sum_{i=101,103-107,110} m_i NO_s \left(\frac{tons}{year}\right)\right] \bullet \frac{2,000 lbs}{ton} - m_{102b} \left(\frac{lbs}{year}\right) - m_{102c} \left(\frac{lbs}{year}\right) \right\} \bullet T \right] \\ \left[ \frac{\left\{ 15.0 \left(\frac{tons}{year}\right) - \sum_{i=101,103-107,110} m_i NO_s \left(\frac$$

Where

$$\sum_{i=101,103-107,110} \left(\frac{tons}{year}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110}) \left(\frac{tons}{year}\right)$$

Is the summation of annual CO emission rates for emission points 101 and 103 through 110

$$\sum_{i=101,103-107,110} m_i TSP\left(\frac{tons}{year}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110})\left(\frac{tons}{year}\right)$$

Is the summation of annual TSP emission rates for emission points 101 and 103 through 110

$$\sum_{i=101,103-107,110} m_i SO_2\left(\frac{tons}{year}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110})\left(\frac{tons}{year}\right)$$

Is the summation of annual SO<sub>2</sub> emission rates for emission points 101 and 103 through 110

$$\sum_{i=101,103-107,110} m_i NO_x \left(\frac{tons}{year}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110}) \left(\frac{tons}{year}\right)$$

Is the summation of annual NO<sub>x</sub> emission rates for emission points 101 and 103 through 110  $\sum_{i=101,103-107,110} m_i TSP \left(\frac{tons}{year}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{106} + m_{107} + m_{110}) \left(\frac{tons}{year}\right)$ 

Is the summation of annual TSP emission rates for emission points 101 and 103 through 110

 $\underline{m_{102b}}$  = annual emissions from flaring all AOG step of the run flare

 $\underline{m_{102c}}$  = annual emissions from flaring converter off-gas through EP-75 without water absorption step of the run flare

T = total operating hours of the run flare

 $T_1$  = total hours of flaring all AOG of the run flare and flaring AOG through EP-75 without water absorption

 $C = concentration of NO_x$  in the absorber offgas

Equation 5b:

$$V\left(\frac{scf}{\min.}\right) = \min\left\{ \begin{bmatrix} \left(269.9\left(\frac{lbs}{hr}\right) - \sum_{i=101,103-105,110} m_i CO\left(\frac{lbs}{hr}\right)\right) - 0.07694\left(\frac{lbs}{hr}\right)}{0.00309974}\right], \\ \left[ \left(\frac{20.6\left(\frac{lbs}{hr}\right) - \sum_{i=101,103-105,110} m_i SP\left(\frac{lbs}{hr}\right)\right) - 0.005529\left(\frac{lbs}{hr}\right)}{0.00022278}\right], \\ \left[ \left(\frac{3.0\left(\frac{lbs}{hr}\right) - \sum_{i=101,103-105,110} m_i SO_2\left(\frac{lbs}{hr}\right)\right) - 0.000744\left(\frac{lbs}{hr}\right)}{0.0000300612}\right], \\ \left[ \left(\frac{236.6\left(\frac{lbs}{hr}\right) - \sum_{i=101,103-105,110} m_i NO_3\left(\frac{lbs}{hr}\right)\right) - 0.008974\left(\frac{lbs}{hr}\right)}{0.00039725 + 0.0000769 \bullet C}\right], \\ \left[ \left(\frac{185.62\left(\frac{lbs}{hr}\right) - \sum_{i=101,103-105,110} m_i NO_2\left(\frac{lbs}{hr}\right)\right)}{0.00003702}\right] \\ \right] \right\}$$

Where 
$$\sum_{i=101,103-105,110} m_i CO\left(\frac{lbs}{hr}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{110})\left(\frac{tons}{year}\right)$$

Is the summation of hourly CO emission rates for emission points 101, 103 through 105 and 110

Where 
$$\sum_{i=101,103-105,110} m_i TSP \left(\frac{lbs}{hr}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{110}) \left(\frac{tons}{year}\right)$$

Is the summation of hourly TSP emission rates for emission points 101, 103 through 105 and 110

Where 
$$\sum_{i=101,103-105,110} m_i SO_2\left(\frac{lbs}{hr}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{110})\left(\frac{tons}{year}\right)$$

Is the summation of hourly SO<sub>2</sub> emission rates for emission points 101, 103 through 105 and 110

Where 
$$\sum_{i=101,103-105,110} m_i NO_x \left(\frac{lbs}{hr}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{110}) \left(\frac{tons}{year}\right)$$

Is the summation of hourly NO<sub>x</sub> emission rates for emission points 101, 103 through 105 and 110

Where 
$$\sum_{i=101,103-105,110} m_i VOC \left(\frac{lbs}{hr}\right) = (m_{101} + m_{103} + m_{104} + m_{105} + m_{110}) \left(\frac{tons}{year}\right)$$

Is the summation of hourly VOC emission rates for emission points 101, 103 through 105 and 110

**Equation 5c:** 

$$V\left(\frac{scf}{\min.}\right) = \min\left\{ \begin{bmatrix} \left(194.24\left(\frac{lbs}{hr}\right) - \sum_{i=101,103-105,110} m_i CO\left(\frac{lbs}{hr}\right)\right) - 0.07694\left(\frac{lbs}{hr}\right) \\ 0.0048979 \end{bmatrix}, \\ V\left(\frac{scf}{\min.}\right) = \min\left\{ \begin{bmatrix} \left(15.16\left(\frac{lbs}{hr}\right) - \sum_{i=101,103-105,110} m_i TSP\left(\frac{lbs}{hr}\right)\right) - 0.00554\left(\frac{lbs}{hr}\right) \\ 0.000352 \end{bmatrix}, \\ \begin{bmatrix} \left(2.27\left(\frac{lbs}{hr}\right) - \sum_{i=101,103-105,110} m_i SO_2\left(\frac{lbs}{hr}\right)\right) - 0.0007462\left(\frac{lbs}{hr}\right) \\ 0.0000475 \end{bmatrix}, \\ \begin{bmatrix} \left(245.7\left(\frac{lbs}{hr}\right) - \sum_{i=101,103-105,110} m_i\left(\frac{lbs}{hr}\right)\right) - 0.008974\left(\frac{lbs}{hr}\right) \\ 0.00301002 + 0.0000769 \bullet C \end{bmatrix}, \\ \begin{bmatrix} \left(224.9\left(\frac{lbs}{hr}\right) - \sum_{i=101,103-105,110} m_i\left(\frac{lbs}{hr}\right)\right) \\ 0.002314 \end{bmatrix} \right\}$$

Equation 6a:

$$E = \frac{835.83 + m_{fugitive}}{918.06}$$

Where  $m_{fugitive} = annual fugitive VOC emission rate in tons per year$ 

Equation 6b:

$$E = \left\{ \left\{ \left[ \frac{\frac{-1.843081}{V_{water}}}{\frac{-1.843081}{V_{water}}} \right]^2 + 3.031937 \times 10^{-2} \bullet \left[ \frac{\frac{-5.22358}{V_{water}}}{Cosh\left(\frac{-5.22358}{V_{water}}\right)} \right]^2 \right\} \right\}$$

Where 
$$E = control efficiency of the scrubber during normal operation Vwater = water flowrate of water to the tank farm scrubber$$

$$\sinh\left(\frac{-1.843081}{V_{water}}\right) = \frac{1}{2} \left[ e^{\left(\frac{-1.843081}{V_{water}}\right)} - e^{\left(\frac{1.843081}{V_{water}}\right)} \right]$$
$$\cosh\left(\frac{-5.22358}{V_{water}}\right) = \frac{1}{2} \left[ e^{\left(\frac{-5.22358}{V_{water}}\right)} + e^{\left(\frac{5.22358}{V_{water}}\right)} \right]$$

# Equation 6c:

$$E = \left\{ \left\{ 4.779896 \bullet 10^{-1} + 5.233884 \bullet 10^{-1} \bullet \left[ \frac{\frac{2.197965 \bullet 10^{1}}{V_{water}}}{\sinh\left(\frac{2.197965 \bullet 10^{1}}{V_{water}}\right)} \right]^{2} + 8.119615 \times 10^{-1} \bullet \left[ \frac{\frac{1.001907 \bullet 10^{1}}{V_{water}}}{\cosh\left(\frac{1.001907 \bullet 10^{1}}{V_{water}}\right)} \right]^{2} \right\} \right\}$$

Where E = control efficiency of the scrubber during maximum operation $V_{water} = water flowrate of water to the tank farm scrubber$ 

$$\sinh\left(\frac{2.197965 \times 10^{1}}{V_{water}}\right) = \frac{1}{2} \left[ e^{\left(\frac{2.197965 \times 10^{1}}{V_{water}}\right)} - e^{\left(\frac{-2.197965 \times 10^{5}}{V_{water}}\right)} \right]$$
$$\cosh\left(\frac{1.001907 \times 10^{1}}{V_{water}}\right) = \frac{1}{2} \left[ e^{\left(\frac{1.001907 \times 10^{1}}{V_{water}}\right)} + e^{\left(\frac{-1.001907 \times 10^{1}}{V_{water}}\right)} \right]$$