PUBLIC VERSION

TITLE V OPERATING PERMIT MODIFICATION (Administrative Amendments) APPLICATION EVALUATION AND REVIEW

Covoro Mining Solutions, LLC

SOURCE NUMBER - 00097

December 2024

Shelby County Health Department
Air Pollution Control Section - Major Sources Branch

TABLE OF CONTENTS

TITLE V OPERATING PERMIT MODIFICATION
(Administrative Amendments)
APPLICATION EVALUATION and REGULATORY REVIEW

Introduction

This narrative was prepared to assist the reviewer in understanding the facility and sources being permitted, and the content, the regulatory basis, and decisions made in preparing this construction permit. This document was also prepared to meet the requirements for the statement of basis in 40 CFR § 70.7(a)(5). This document will become a part of the permanent facility record maintained by the Pollution Control Section of the Shelby County Health Department (the Department).

I. SOURCE INFORMATION

Company:	Covoro Mining Solutions, LLC
Source Number:	00097
Facility/Mailing Address:	2571 Fite Road Millington, TN 38127
Facility Phone:	(901) 353-7213
Owner Address:	1007 Market Street Wilmington, DE 19898
Responsible Official:	Peter Schilthuis, Plant Manager
Mailing Address:	2571 Fite Road Millington, Tennessee 38127
Telephone:	(901) 353-7213
Environmental Contact:	Kimberly Sass, Environmental Leader
Phone:	(901) 353-7146
Billing Contact:	Kimberly Sass, Environmental Leader
Billing Address:	2571 Fite Road Millington, Tennessee 38127
Billing Phone:	(901) 353-7146
Primary Business:	Industrial Inorganic Chemicals Manufacturing
SIC Code(s):	2819
NAIC Code(s):	325188

Existing Permits:

Permit No.	Permit Type	Description	Expiration Date
00097-01TV	Operating	Title V Permit	November 22, 2027
00097-20PC	Construction	Improvements to HCN Process Tank Farm	December 31, 2025

Facility History:

The Covoro Mining Solutions, LLC (Covoro) Memphis Plant is an approximately 214-acre chemical manufacturing facility in Shelby County, Tennessee, located next to the northern boundary of Memphis and south of Millington, Tennessee, approximately 10 miles east of the Mississippi River. The plant is bounded on the south by the Loosahatchie River, on the north by Fite Road, on the east by Millington Road, and on the west by private property and U.S. Highway 51.

Construction of the Memphis Plant began in the fall of 1950. The first processes, hydrogen cyanide (HCN) and sodium cyanide (NaCN), including power (steam generation and other utilities), began production in late 1952. This was followed in 1953 by the hydrogen peroxide process. Potassium cyanide (KCN) production began in 1956 and was manufactured in the same facilities as NaCN, which is otherwise called the Solid Cyanides Process. Production of sodium, chlorine, Oxone™ (potassium monopersulfate compound) and acrylonitrile began in 1959. In June 1967, sodium perborate production was started. Methyl methacrylate (MMA) production began in early 1971 and acrylic sheeting production began in July 1976. Aminonitriles production began in January 1990. Production of sodium and chlorine at the Memphis Plant was discontinued in July 1980 and production of acrylonitrile was discontinued in October 1982. Hydrogen production to support the Hydrogen Peroxide Process commenced in 1983. In 1993 the MMA and acrylic sheeting areas were divested. Sodium perborate production was discontinued in 1994. The Hydrogen Peroxide and Hydrogen Processes were divested in 1998. In 2016 the Oxone™ Process was sold and in 2018 the sheeting process was sold.

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)*
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)*
Completeness Determination:	May 28, 2024 March 21, 2024 - Incomplete *(Forms APC V.30 and 31)*
Public Notice:	Not applicable to January 2025 permit amendments
Public Hearing:	Not applicable to January 2025 permit amendments
Surrounding States Notice:	Not applicable to January 2025 permit amendments
Public Comments Received:	Not applicable to January 2025 permit amendments
To EPA for Review:	Not applicable to January 2025 permit amendments
EPA Comments:	Not applicable to January 2025 permit amendments
Amended Permit Issue Date:	January 29, 2025
Permit Engineer:	Gregg P. Fortunato

Type of Permit:

[ ] New construction
[x] Modification (Administrative)
[ ] Permit to operate requested
[ ] Permit renewal requested
[ ] Rollover to operating permit
[ ] Change of location, name and/or ownership

[ ] Emission increased
[ ] Emission decreased
[x] Emission same

Type of Source:

[x] Major
[ ] Synthetic Minor
[ ] Minor *(unrestricted PTE below major source thresholds for all pollutants)*
[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

III. SPECIFIC REASON FOR APPLICATION

Covoro has submitted an application requesting the following Title V permit administrative amendments to correct errors in the permit and to add several applicable monitoring/recordkeeping requirements associated with 2024 revisions of 40 CFR Part 63, Subpart FFFF (the MON). There are no changes in allowable emissions resulting from this permit hygiene.

1) Applicable pressure release management monitoring and recordkeeping requirements associated with the 2024 revisions to the MON for AN Process pressure relief device in organic HAP service, as stated within §63.2480(e)(3), have been incorporated into Title V Operating Permit No. 00097-01TV as Condition No. 8 on pages 15-17 of the permit.

2) Title V Operating Permit No. 00097-01TV, Page 17, Condition 9, states the AN Process Group 1 wastewater stream (AN-52 decant water) requires compliance with 40 CFR Part 63, Subpart G, §63.138(i)(1). The Department noted that this was stated in a Notice of Compliance Status (NOCS) for the facility during a recent inspection and documented it in the inspection report dated August 18, 2023. A revised NOCS was submitted on January 8, 2024 that corrected the classification and compliance status for all three AN process wastewater streams referenced in this condition.

Wastewater Stream ID	Group Type
a) Tanker truck washing	1
b) Washing out after campaign	1
c) AN-52 decant water[2]	1

The compliance option is collection in a RCRA 90-day fixed roof storage tank and disposed of as a hazardous waste at a RCRA incinerator. The permit was amended to accurately reflect that the source must comply with 40 CFR Part 63, Subpart G, §63.138(h)(1, 2 or 3) as referenced by 40 CFR 63, Subpart FFFF, §63.2485(i). Additionally, wastewater stream group types, identified as a) and b) in the table above, were identified incorrectly as Group 2 streams in the permit and corrected.

3) Title V Operating Permit No. 00097-01TV, Page 17, Condition 10 has been amended to reflect changes in MON requirements.

With the 2024 revisions to the MON, non-exempt heat exchangers must now comply with §63.2490(d) monitoring requirements, 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 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).

4) Title V Operating Permit No. 00097-01TV, Page 43, Condition 15(f) requires records of offgas fed to the Start-Up Flare. Offgas is not used as a fuel for this flare; therefore, item f) of Condition 15 has been removed.

5) Title V Operating Permit No. 00097-01TV, Page 43, Condition 18 required the facility to install and operate a compliant start-up flare flow meter in accordance with the Title V permit compliance plan. This was misunderstanding as the flare is equipped the necessary flow indicator. Reference to the compliance plan has been removed from this condition and the compliance plan itself has been removed from Section V of the permit (Page 85)

6) Title V Operating Permit No. 00097-01TV, Page 47, Condition 40(b) requires records of offgas fed to the Tank Farm Flare. Offgas is not used as a fuel for this flare; therefore, item b) of Condition 40 has been removed.

7) The following conditions were located in "Reporting Requirements" sections of the Title V permit and should have been located in the "Monitoring and Recordkeeping Requirements" section of the permit. The conditions have been moved within the permit accordingly.

Process (Source)	Condition	Current "Reporting Requirements" Page and Condition Number	New "Monitoring and Recordkeeping Requirements" Page and Condition number
AN EPN-001	Hourly visual confirmation records of flare pilot flame presence during periods of pilot flame and/or thermocouple monitoring system malfunction	Page 18 Condition 1(g)	Page 18 Condition 2(b)
HCN EPN-101	Documentation of times and durations of flare flame or pilot flame outages during operation and start-up events	Page 49 Condition 1(j)	Page 43 Condition 15(f)
HCN EPN-102	Documentation of times and durations of flare flame or pilot flame outages	Page 49 Condition 1(p)	Page 44 Condition 23(e)
HCN EPN-103-105	Records of the combustion zone temperature of each process heater below 800 degrees centigrade (3-hour average)	Page 50 Condition 1(s)	Already covered under Condition 36 on page 44
HCN EPN-108	Documentation of times and durations of flare flame or pilot flame outages	Page 50 Condition 1(z)	Page 47 Condition 40(c)
HCN EPN-109	Records of monthly visual inspections of seals or closure mechanisms for the Vent Scrubber bypass valve	Page 50 Condition 1(ff)	Page 48 Condition 48(d)
HCN EPN-109	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;	Page 50 Condition 1(gg)	Page 48 Condition 48(e)
Power Area P01 and P02	Periods of Boiler #1 and Boiler #2 firebox temperature below 650º F (3-hour average) when combusting absorber off gas in these boilers	Page 73 Condition 1(e)	Already covered under Condition 5 on page 73

8) Emergency engine recordkeeping of consecutive 12-month rolling run hours and emission calculations have been changed to annual requirements as originally intended by the Department. (Condition No. 4 on page 83 and No. 1 on page 84 of the permit)

9) General conditions have been updated.

IV. PROCESS DESCIPTIONS

4.1 Aminonitriles (AN) Process Area

Aminonitriles are produced by combining various ketones, ammonia and HCN in a reactor. The Aminonitriles (AN) Process is a batch process regulated under the Miscellaneous Organic NESHAP, 40 CFR Part 63, Subpart FFFF (MON Rule). It is designed to produce a family of aminonitrile products.

The AN Process area consists of a production area, storage tank area, emission control flare, and tank truck/tank car loading area. A process block flow diagram is included in the permit renewal application. The AN Process consists of a single reaction vessel equipped with external heat exchanger, ancillary tanks, process piping, pumps, etc.

The AN Tank Farm houses a total of seven tanks; however, the triethylamine (TEA) storage tank is out of service and no longer used. Three tanks are used for product storage. Two tanks are used for ketone storage. TEA, a process additive, is added to the process via drums. The last tank is a 90-day RCRA hazardous waste accumulation tank used for temporary storage of process wastewaters prior to being shipped off site for proper treatment and disposal in accordance with RCRA regulations. The wastewater is loaded into tank trailers prior to shipment off site for RCRA permitted treatment and disposal. This is considered an insignificant activity.

The wastewater and stormwater from the unit are also regulated under the Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) effluent guidelines of the Clean Water Act.

The AN Flare serves two purposes, the first of which is to burn AN Process vent emissions during normal operation. This includes emissions from the three product storage tanks and the wastewater storage tank. Second, the AN flare is designed to burn both volatile organic compounds (VOCs) and hydrogen cyanide (HCN) from various pressure relief valves located in the process. The AN Flare was designed by the John Zink Company and has a destruction efficiency rating of 98 percent.

The AN Process operates a tank truck loading/unloading location. All emissions from AN loading/unloading are also routed to the AN Flare.

4.2 Hydrogen Cyanide (HCN) Process Area

HCN is synthesized utilizing the process in which methane and anhydrous ammonia are passed over a precious metal catalyst at elevated temperatures. An overall process flow diagram is presented in the permit renewal application

To insure safety in the handling and shipment of the HCN product, SO_2 and sulfuric acid are added to maintain stability. Off-grade product, recycle water from the HCN storage tank vent scrubber, and washwater from Solid Cyanide manufacturing and handling is also recycled to recover HCN. When the HCN refining train is not operating, water from the HCN storage tank vent scrubber is sent to wastewater treatment.

The treatment of the cyanide waste is accomplished using an alkaline-chlorination process in the Trade Waste Area.

HCN is stored in continuously cooled tanks before being transferred to on-site customers. This area is called the HCN Tank Farm Area. Vapors from the storage tanks, product transfers, and pipeline shutdowns are collected and scrubbed in a packed column. The resulting aqueous HCN stream is returned to the recovery and refining portion of the process but can also be sent to Trade Waste for treatment if necessary. The Tank Farm Flare can be used as an alternative or backup to the packed scrubber when the scrubber is taken out of service.

There are no control device bypasses in the HCN process.

4.3 Solid Cyanides Process Area

The Solid Cyanides Process is designed to manufacturer sodium cyanide and potassium cyanide. These products are produced from combining hydrogen cyanide with sodium hydroxide or potassium hydroxide in a crystallizer. The cyanide slurry from the crystallizer is filtered and dried using hot air. The solid product is then separated by filtration and cyclone and then prepared for distribution. The final product is packaged in Flo-Bin containers, drums, bags, boxes, hopper cars, tank cars and/or tank trucks for shipment to customers. Washwater containing sodium cyanide or potassium cyanide from the Wet-End and Dry-End of the process and water from equipment decontamination is collected in storage tanks and piped back to the HCN process where it undergoes acidification (using sulfuric acid). Recovered HCN is then recycled back into the HCN Process. Remaining water goes to Trade Waste for treatment.

The emission sources are subdivided into the following three emission groups: Fuel Burning Installation, the Wet-End Process, and the Dry-End Process. Insignificant activities include wash water accumulation, painting and sandblasting.

4.3.1 Fuel Burning Installation

This emission group covers the combustion vent for the Process Air Heater. The Process Air Heater is a natural gas fired heater. Air from the heater is used to dry cyanide slurry from the process reactor. Heated air from the Process Air Heater is also used to convey solids throughout the production area while simultaneously completing the drying process. The process air heater is a non-contact heater and is designated as fuel burning non-process equipment. The only emissions from the heater vent are the products of combustion of natural gas.

4.3.2 Wet-End Process

This emission group covers the emission point associated with the wet chemistry of the Solid Cyanide Production Process. The initial step of the process involves the production of cyanide slurry (NaCN or KCN). Sodium cyanide is produced by mixing hydrogen cyanide with sodium hydroxide in a process reactor (crystallizer). The exothermic reaction is rapid and produces water as a by-product. The water is “boiled off” via a heat exchanger and vacuum control system. The vapor that is “boiled off” is condensed in the vacuum control system and collected in a Hotwell Tank. It is then discharged to the site permitted wastewater pretreatment system prior to discharge

to the City of Memphis POTW. Additionally, sodium cyanide in a solution of water or sodium hydroxide can be fed to the crystallizer either independently or simultaneously. Minor emissions of ammonia, VOC and other non-condensables from the reaction step are discharged through the Hotwell Vent**.**

Potassium cyanide is also produced as described above, using the same process equipment with minor equipment/piping changes, except that potassium hydroxide is used in place of sodium hydroxide.

Upon completion of the reaction, the cyanide slurry from the crystallizer is filtered and partially dried using air from the Process Air Heater. Excess liquor and cyanide solution from the filter is collected and recycled to the crystallizer via the Feedwell system. Extremely small amounts of ammonia, HCN and volatile impurities are discharged through the Feedwell Vent.

4.3.3 Dry-End Process

This emission group covers the emission sources associated with the Dry-End of the Solid Cyanide Production Process. The Dry-End Process has a closed heated air conveyance and recycle system and a dust & fume capture system, which utilizes two water-based scrubber systems to recover product, dehumidify air for reuse, and to control emissions (Recycle Scrubber/Demister Scrubber and the Dust & Fume Scrubber). The scrubbers are considered controls under the Generic MACT for Cyanides Manufacturing, 40 CFR Part 63, Subpart YY.

Performance testing of the two systems was performed to substantiate the control efficiency for the collection of process vents required by 40 CFR Part 63, subpart YY, for the Dry-End Process vents per Table 9 (item(d)(i)) to 40 CFR §63.1103(g). Due to moisture and solids loading, the Method 5 compliant probes plugged, preventing successful measurement of the process vents (inlets to the two scrubber systems). Although unable to test the inlets to the scrubber systems, testing continued on the stacks so as to have valid emissions data from the control devices that could be used with the engineering and process technology data. Reference Part 2 Section 4.0 and Appendix I of the Notice of Compliance Status submitted to EPA and Shelby County on September 9, 2005, last revised on February 28. 2006.

4.4 Power Area

The Power Area produces steam for the plant and the immediately adjacent tenants. The area consists of four boilers, out-of-service fuel oil storage tanks, and miscellaneous auxiliary equipment. Three of the boilers, Boilers #1, #2, and #3, are capable of burning combinations of

Hydrogen Cyanide Absorber Off-Gas (AOG) and natural gas, or natural gas alone. Boiler #4 combusts natural gas only.

The facility also has three emergency diesel-fired fire pump engines, two diesel-fired emergency generator engines and two more diesel-fired emergency generator engines currently under construction (Construction Permit No. 00097-21PC).

4.5 Wastewater Collection and Treatment

The treatment of cyanide-bearing wastewater is accomplished using an alkaline-chlorination process in the Trade Waste Area of the Memphis Plant. Cyanide-bearing wastewater is collected from the Hydrogen Cyanide and Solid Cyanides process areas and conveyed via gravity flow pipeline to the Trade Waste system. Aminonitriles, stormwater, and wastewater from the Lanxess Oxone™ Process, which can provide some cyanide oxidation, are also discharged through Trade Waste. The collection system is an underground pipeline with several atmospheric vents at junction boxes.

V. EMISSION POINTS, UNITS, and EMISSION CALCULATION BASIS

5.1 Aminonitriles (AN) Process – Emission Unit 1

TABLE 5.1

Emission Unit No.	Description	Emission Point No.	Control Device	Pollutants[1]
A01	AN Production Process Vents (including Reactor) (AN Flare exhaust)	001 (Flare)	Flare	NO_x, CO, SO_2, PM, VOC, HAP (HCN) and NH_3
	Materials/Product Storage Tank	051		Insignificant Activities
	Materials/Product Storage Tank	052		
	Materials/Product Storage Tank	053		
	Wastewater Storage Tank	054		
A02	Ketones Storage Tank No. 1	055	None	
	Ketones Storage Tank No. 2	056	None	

[1] Nitrogen Oxides (NO_x), Carbon Monoxide (CO), Sulfur Dioxide (SO_2), Particulate Matter (PM), Volatile Organic Compounds (VOC), Hydrogen Cyanide (HCN), Hazardous Air Pollutant (HAP), and Ammonia (NH_3)

Emission Unit A01 covers a production flare, product storage tanks and a wastewater tank. The AN Flare is Emission Point 001. The AN Flare is an emission control device used to burn process off gas, product and wastewater storage tank emissions. The product storage tanks and wastewater tank are Emission Points 051 through 054.

Emission Unit A02 is the vented emissions from two ketone storage tanks, Emission Points 055 and 056. Emissions from the storage tanks are generated due to tank filling and normal tank breathing. Ketones storage tank No. 1 may store one or more possible ketones used in the AN Process. Ketones storage tank No. 2 also stores one or more possible ketones used in the AN Process.

5.1.1 AN Flare

The AN Flare serves two purposes: it abates process vents from the AN Process during normal operation, and it can abate potential VOCs from relief valves on specific process vessels. Production, raw material and a wastewater storage tanks also vent to the AN Production Flare. The manufacturer, John Zink Company, designed the flare for a VOC destruction efficiency of 98+% and for compliance with the requirements of 40 CFR 60.18. Typical emissions include:

- Particulates (PM/PM_{10})
- Sulfur Dioxide (SO_2)
- Nitrogen Oxides (NO_x)
- Volatile Organic Compounds (VOC)
- Hydrogen Cyanide (HCN) and Hazardous Air Pollutants (HAPs)
- Carbon Monoxide (CO)
- Ammonia (NH_3)

Normal and maximum emissions from the AN Flare are calculated using emission factors related to the composition and heat output of the flare. Heat output is calculated by using both the English and metric system for the process gases generated during the different batch sequences. Heat content and maximum velocities have been calculated for each of the operational steps that vent to the AN Flare. Note that the natural gas supplement and tank breathing are continuous and are included in all steps.

5.1.2 AN Fugitives

A spreadsheet outlining fugitive emissions by compound for the AN Process is included within the permit application. The spreadsheet is based on valve, flange and pump seal counts in the process and use company emission factors, which are in units of lb/hr per equipment piece.

Operational and Calculation Methodology

The AN area is a small batch manufacturing facility producing a family of chemical intermediates called aminonitriles. These chemicals are similar in that they are the product of reacting hydrogen cyanide, ammonia and a product specific ketone. The selection of the ketone is dependent on the use of the product. Various aminonitrile intermediates may be manufactured. Each intermediate is produced in a batch reaction. Product is typically made under a campaign format with multiple batches of the same product being produced over several days or weeks.

The application dated May 2017 listed 14 operational steps for the aminonitriles production process and of those, ten steps generated air emissions. In October 2019, as part of an approved Operational Flexibility Request, the drop tank was removed from the AN Process. Additionally, TEA is now loaded into the process from drums rather than from trucks into a TEA Tank. Accordingly, for the purpose of calculating emissions, the AN Process has now been divided into 11 operational steps. Eight of the 11 steps generate air emissions. All air emissions are collected and controlled by the AN Flare.

The eight operational steps are as follows:

1. Charge the reactor with ketone (Step 2 in application calculations)
2. Depressure (or venting) of the reactor (Step 6 in application calculations)
3. Transfer of product to storage (Step 7 in application calculations)
4. Loading of tank trucks (no longer loading railcars; Step 8 in application calculations)
5. Transfers of washwater (Step 10 in application calculations)
6. Decanting of water layers (Step 11 in application calculations)
7. Natural gas supplement to flare (Step 12 in application calculations)
8. Tank breathing losses (Step 13 in application calculations)

Variability does exist in the operation and scheduling of product batches; therefore, the operation is limited by average emission rates and other permit conditions.

5.2 Hydrogen Cyanide (HCN) Process – Emission Unit 2

TABLE 5.2

Emission Unit Group No.	Description		Emission Point No.	Control Device	Pollutants
C01	Start-up Flare	The Start-up and Run Flares are used to control converter feed gases and excess converter Off-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.	101	Flare (Air assist)	NO_x, CO, SO_2, PM, VOC, HAP (HCN, Acetonitrile and Acrylonitrile), NH_3 and Sulfuric Acid
	Run Flare		102	Flare	
	Fuel Burning Installation (Process Heater)		103	Oxygen Trim Systems	
	Fuel Burning Installation (Process Heater)		104		
	Fuel Burning Installation (Process Heater)		105		
C02	Tank Farm Flare (Back up)	Vapors from storage tanks, product transfers, and pipeline shutdowns are collected and scrubbed in the Vent Scrubber (a packed column) or combusted in the Tank Farm Flare	108	Flare	NO_x, CO, SO_2, PM, VOC, and HAP (HCN, Methanol, Acetonitrile and Acrylonitrile)
	Tank Farm Vent Scrubber (Primary)		109	Scrubber	
C04	Process Wastewater Vents (multiple)		110	None	VOC, HAP (HCN, Methanol, Acetonitrile and Acrylonitrile) and NH_3
NA	Vent Sodium Cyanide Recycle Tank		96	None	Insignificant Activities
	Methanol Brine Tank		18		
	Methanol Brine Tank		110A		
	Methanol Brine Tank		110E		
	Portable Additive Tank		NA		

Emission Unit C01 covers emission points located in the HCN process. The HCN process is divided into components: HCN synthesis and fuel burning equipment, ammonia recovery, and product refining. HCN storage, wastewater treatment, and emergency relief devices are not included in Emission Unit C01. A total of five emission points are located in Emission Unit C01.

These units are:

- Start-up Flare – EPN 101
- Run Flare – EPN 102
- Fuel Burning Installations – EPN 103, 104, and 105

The Start-up and Run Flares are emission control devices used to control converter feed gases and excess converter Off-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, respectively.

There are three units that are fuel burning equipment. They are designated as three separate emission points (EPN 103, 104, and 105). The Hydrogen Cyanide area fugitive emissions include, but are not limited to, items such as wastewater treatment systems, fugitive emissions, leaks from well-maintained equipment, and releases, if they were to occur.

The following compounds create fugitive emissions in the HCN process:

- NH_3
- HCN
- Methanol
- Acetonitrile
- Acrylonitrile
- minor CO, NO_x, and SO_2

A permit application spreadsheet outlining fugitive emissions by compound for the HCN process follows after Operational and Calculation Methodology. These permit application spreadsheets are based on valve, flange, and pump seal counts in the process and use company emission factors, which are in units of lb/hr per equipment piece.

Emission Unit C02 covers emission points located in the HCN Tank Farm Area. HCN product is stored in four continuously cooled tanks prior to transfer to on-site customers. Vapors from storage tanks, product transfers, and pipeline shutdowns are collected and scrubbed in the Vent Scrubber (a packed column) or combusted in the Tank Farm Flare. The resulting aqueous HCN stream from the Vent Scrubber is returned to the HCN Process as product recycle or, if the process is down, it is sent to Trade Waste for wastewater treatment. The Tank Farm Flare is used when the Vent Scrubber is taken out of service.

A total of two emission points are located in Emission Unit C02. These points are:

- Tank Farm Vent Scrubber – EPN 109
- Tank Farm Flare – EPN 108

Fugitive emissions are generated in the Tank Farm area. Fugitive emissions include ammonia, hydrogen cyanide, methanol, acetonitrile and acrylonitrile. The Tank Farm Area operational and calculation methodology is presented later in this section.

Emission Unit C04 addresses the fugitive emissions of hydrogen cyanide, acetonitrile, and acrylonitrile from the Trade Waste Wastewater Collection and Treatment Facilities (Trade Waste). These fugitives are emitted from a series of wastewater process vents, included in the application as EPN 110.

5.2.1 Start-up and Run Flares

Emissions from both flares are based on the Texas Natural Resources Conservation Commission (TNRCC) flare emission factors related to the chemical composition and heat input to the flare. TNRCC flare guidance allows for 98% destruction efficiency of hydrogen cyanide and other organics. The TNRCC flare guidance uses 99% destruction efficiency for ammonia. For the Run Flare, the EPA Hydrogen Flare Study also provides that flares with hydrogen content >8% by volume achieve 99.5% destruction efficiency of HCN and other organics. The combinations of emission factors used are detailed on the process spreadsheet included in the permit application.

The expected emissions for permit limitations have been determined by estimating start-up, shutdown and de-inventory events using approximate durations. Due to the variability and type of events that can happen in any given year and the inability to predict exact scenarios that can happen, operations are limited by the resulting lb/hr (daily average) and annual (consecutive 12-month rolling) ton limitations.

Start-up Flare

The Start-up Flare is an emission control device used to flare converter feed gases and excess converter off-gases generated during the startup and shutdown of the HCN process. The emission calculations are summarized in the permit application.

Booster Gas (Natural Gas) used when needed to maintain stable flame, all cases

The Start-up Flare calculations present a summary of emissions and basis for determinations. The basis includes destruction efficiencies, emission factors and their sources. The tables summarize emissions from each of the five operating scenarios. Based on information in published literature titled *Chemical Reactions in the conversion of Fuel Nitrogen to NO_X*, by Axworthy, Schneider, and Dayan in 1976, it was concluded that HCN and NH_3 react similarly to produce NO_X and therefore the same emission factor of 0.005 lb NO_X / lb of NH_3 and HCN is used. As a result, the NO_X generated was increased for the Start-up Flare for post-ignition and Case 3, and for the Run Flare, normal operation and Maximum Cases 1 and 2.

A table of emission calculations for the pilot system is also included. In each case, the volume of natural gas used is translated into a Btu/yr output. The heat output is then multiplied by the emission factor to calculate the actual emissions.

The Start-up Flare operates as a Hydrogen Flare during the post-ignition phase of converter start up and during the infrequent occasion the converters have to be flared during downstream maintenance, Start-up Flare Case 3. Its calculations and demonstrations are similarly included in the permit application.

Run Flare

The Run Flare is an emission control device used to control excess HCN Absorber Off-Gas (AOG) generated during the operation of the HCN process.
The emission calculations are summarized in the permit application.

The Run Flare generates emissions from its natural gas pilot system and from operating situations such as flaring excess off-gases during normal operations, flaring of all Absorber Off-Gas (AOG) and or flaring of COG through EP-75 (HCN Absorber Column). Normal operation off-gases are generated from the natural gas pilots and HCN Refining area. Similar to the Start Up Flare, Run Flare emissions are based on the chemical composition of COG and AOG and the resultant heat contents (BTU/SCF). Emissions are calculated by chemical composition and destruction efficiency or by heat content and emission factors.

As required by the Generic MACT, Subpart YY, Cyanide Chemicals Manufacturing, 40 CFR 63.1103(g), the Run Flare must successfully meet the following criteria, by test or engineering calculation, as provided in the regulation.

- 63.11(b) – greater than 8% H2 and maximum exit velocity by engineering calculation;
- 63.987(b)(3)(i) – EPA Method 22 Visible emission testing (2 hr);
- 63.1103(g)5(iv) – engineering calculation using existing process flow meter and actual gas sampling and analyses for composition and Btu content

The emission calculations and demonstration of minimum heat content and maximum velocity by engineering calculations are summarized in the permit application. Normal annual and average emissions from the Run Flare are calculated using emission factors related to the chemical composition and heat input to the flare. Heat input is calculated by using the Btu content per cubic foot of AOG multiplied by the volume of AOG generated during different operating scenarios.

The three principal Run Flare operating scenarios are:

1) Normal operation;
2) Flaring all AOG; and
3) Flaring converter off gas through EP-75.

The basis for emissions rates includes destruction efficiencies, emission factors (and sources), and miscellaneous information. Calculations begin with determination of the Btu/scf content of AOG generated during normal operation of the HCN process. This calculation is similar to those presented in the Start-up Flare discussion.

The first part presents the calculation of normal operation. This calculation sums the heat content of AOG and Natural Gas Pilot system into a single heat content value. This value is multiplied by emission factors to generate emissions. The remainder of the Run Flare calculations show emissions from two maximum case alternate operating scenarios.

Approximately two times per year, all AOG is sent to the run flare. The heat content of this gas is similar to normal operations, although a larger volume of gas is flared during these operations. Also, approximately twice per year, the HCN Absorber operation can be suspended and all AOG may be sent to the Run Flare. For permitting purposes, the events and times are estimated so as to provide approximate annual hours.

<u>HCN Process Run Flare Description</u>

Stack Diameter:	3.5 ft
Annual Flow:	9.96×10^9 ft^3/yr
Average Velocity:	35 ft/sec
Max. Possible Flow:	52,536 scfm
Max. Possible Velocity:	91 ft/sec

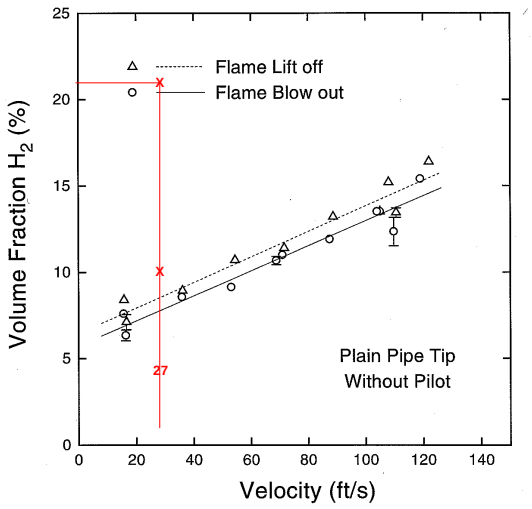
Absorber Off-Gas

Typical H_2 Content:	23 % by volume	
Heat Content:	86 Btu/scf Low 94 Btu/scf Typical	
By EPA Methods:	28% by volume 109 Btu/scf	Collection 18, Analysis 3C Collection 18, Analysis ASTM 1946

The Run Flare maximum possible velocity is 91 ft/sec at 53,000 scfm, well below the maximum velocities of 122 ft/sec and 154 ft/sec (@18% H_2) allowed under 40 CFR 63.11(b)(6)(I)(A) and its calculations for hydrogen flares. Typically, the highest actual velocity has been ~49 ft/sec at ~28,000 scfm.

Based on the process description of the HCN Run Flare and subsequent engineering calculations, a hydrogen content of 20% by volume and an average 27 ft/sec velocity, the control efficiency of the Run Flare was determined to be >99.5% using the basis provided by the Hydrogen Flare Study conducted and overseen by EPA, Research Triangle Park, NC. Reference the document, Basis and Purpose Document on Specifications for Hydrogen-Fueled Flares, March 1998, by the EPA's Emissions Standards Division.

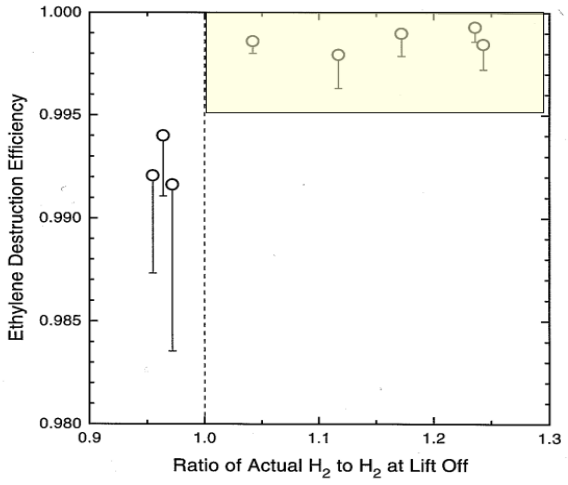
Ratio of Hydrogen Concentrations



With a hydrogen to hydrogen to "lift off" ratio of 2.5, the HCN Process Run Flare meets the determination of greater than or equal to 99.5% control as indicated in the Basis and Purpose document chart below showing the relationship of hydrogen ratio to control % of ethylene.

Ethylene was selected for the EPA's test work due to its comparable thermodynamic properties to hydrogen cyanide.

Ethylene Destruction Efficiency



5.2.2 Fuel Burning Non-Process Equipment

Fuel burning non-process equipment is used to heat gas streams. The non-contact units burn excess HCN AOG generated in the HCN Refining portion of the process. Usage varies based on market demand.

Normal and maximum emissions from the Units are calculated using emission factors based on the Absorber Off-Gas (AOG) flow. AOG consists of hydrogen cyanide, miscellaneous nitriles, hydrogen, methane, oxygen, nitrogen, nitrogen oxides, carbon monoxide, carbon dioxide, sulfur dioxide, and water.

These emission factors were determined from stack emissions testing in February 1997. Although moderately lower emission factors were seen in subsequent testing in 2007, the 1997 data remains basis.

The second section calculates the Btu content per standard cubic foot (Btu/scf) for typical AOG.

5.2.3 Tank Farm Vent Scrubber

The Tank Farm Vent Scrubber is a countercurrent packed column. The removal efficiency for HCN by the scrubber has been modeled using the Aspen Plus computer model. The Aspen Plus computer simulation has shown the HCN control efficiency to be greater than 99.9% for vapors from the HCN Storage Tanks at specific minimum continuous water flow rates.

5.2.4 HCN Tank Farm Flare

The HCN Tank Farm Flare is used to combust HCN storage tank vapors and vapor generated during product line purging. The Tank Farm Flare serves as a backup for the Tank Farm Vent Scrubber. The Tank Farm Flare is typically used when the Vent Scrubber is out of service but can be operated jointly with the scrubber. It can also be used if the scrubber were to malfunction or

require maintenance. It may also be used when the HCN process is shut down or when the continuous scrubber effluent cannot be recycled.

The Tank Farm Flare controls emissions from the same sources as the Vent Scrubber.

Tank Farm Flare emissions are calculated similar to the HCN Process Start Up and Run Flares. In each case, the heat content of the vapor going to the flare is calculated. The emission factors based on heat content are used to determine the amounts of CO and NO_x that are generated. HCN emissions are determined using destruction efficiencies from the TNRCC flare guidance. NO_x resulting from the nitriles in the feeds (principally HCN) to the Flare is also determined. SO_2 is assumed to pass through and particulates are assumed negligible. Natural gas serves as assist for the Flare. The §60.18 Btu/scf criteria is a compliance requirement under the Cyanide Manufacturing MACT, which became effective on July 12, 2005. The Tank Farm Flare was upgraded to an automatic continuous pilot with a new flare tip design in 2004 to meet the MACT requirement. The project also provided the natural gas assist via fixed flow orifice plate in the natural gas supply to the flare.

The Tank Farm Flare incorporates an automated re-ignition system. The Tank Farm Flare was upgraded to an automatic continuous pilot with a new flare tip design in 2004 to meet the MACT requirement. The project also provided natural gas assist via fixed flow orifice plate in the natural gas supply to the flare. Natural gas assist assures a minimum heating value >200 Btu/scf. The current system is manufactured and supplied by NAO, Inc., and is a 6" NFF-CGA, NAO Fluidic™ Flare-Center Gas Assist Flare.

5.2.5 Wastewater Collection and Treatment Fugitive Emissions

Fugitive emissions from the wastewater vents (primarily hydrogen cyanide, acetonitrile and acrylonitrile), come out of solution from process wastewater transferred via pipeline to the Wastewater Collection and Treatment System (Trade Waste). Under the CWA Pretreatment Program and by permit, Trade Waste pre-treats the cyanide-bearing wastewater prior to discharge to the City of Memphis POTW.

Occupational Health evaluations and monitoring over the years have identified compounds occasionally present, or suspected to be present, within Trade Waste, but at extremely low levels. The intermittent presence and low-level concentrations (typically below 1 ppm), along with possible interference from compounds normally present, do not lend to the quantification of emissions. The compounds would be typically fugitive, with some possibly present in the vented collection system as well and could potentially include perchloric acid and air pollutants such as chloramine, chloroform, and possibly others. The intermittent sources or mechanics of generation of such low-level presence has not been defined except for perchloric acid which results from the combination of ultraviolet light and hypochlorite in the ponds. Slight chloramines and ammonia odors can be present due to hypochlorite addition for wastewater treatment or higher Ammonia Recovery process discharge rates, respectively.

Cyanide-bearing wastewater is collected from the Hydrogen Cyanide and Solid Cyanides Processes. Aminonitriles stormwater is also received. Inorganic secondary materials are used for pH adjustment or replacement of sodium hypochlorite for cyanide oxidation. For the purposes of

this permit, all vents and the trench/box openings serving the collection system are being treated as a single emission point. This approach was used because the "off-gassing" of wastewater is a function of pH and temperature, and will vary somewhat at each vent point throughout the range of operations.

Wastewater Collection and Treatment Facilities (Trade Waste) emissions are derived from the USEPA Water8 model (Version 1 & 4) and Water9 model. Air fractions for acetonitrile were taken from the latest Water9 model, whereas hydrogen cyanide emissions are based on the earlier Water8 model version 1 since its Henry's Law coefficient was much higher, yielding higher emissions. This was done since the model does not consider pH, a factor in hydrogen cyanide emissions. Acrylonitrile was determined by using the same factors as acetonitrile.

Fugitive ammonia emissions were determined by using the Toxchem+ model and the annual emissions shown are representative of two-pond operation.

This system consists of ~1250 ft. underground vented fiberglass pipe. There are typically 15 vent stacks and several trench/box openings on the wastewater collection system. For the stacks, approximate heights (within ~10%) and diameters are:

Wastewater Vent Stack Information

Collection System Section	Vent Number	Diameter (in.)	Approximate Height (ft.)
1	1	8	43
	2	4	50
	3	4	50
	4	4	50
	5	4	50
	6	4	50
2	7	4	35
	8	4	35
3	9	4	50
	10	4	15
	12	4	15
	13	4	15
	14	4	15
Other	Assorted surface vents and stormwater drains		

The model uses the inlet concentration of each pollutant, wastewater flows and physical/chemical parameters to predict emissions. A worst-case scenario was selected to estimate maximum emissions but should not be limited to any single scenario. The scenario is an upset of the HCN Process refining train and the contents of an HCN refining column are released to the wastewater system over 30 to 60 minutes.

This scenario is part of the process design and normal range of Trade Waste operation. Air fractions for acetonitrile and acrylonitrile were taken from Water9, whereas hydrogen cyanide emissions are based on Version 1 since the Henry's Law coefficient used was higher, therefore

yielding a higher emission rate. This was done since the model does not consider pH, an important factor for HCN aqueous solutions. The emission rates determined through the model were considered to be very conservative.

Emission rate, gas exit temperature, velocity, moisture content and volumetric flow rate from each vent will vary depending on process conditions, pH, distance from the point of generation, and ambient conditions. The overall emission limits for VOC (mostly HCN and acetonitrile) from this source are based on EPA wastewater models. Due to limitations in the models, the system was broken up into separate sections and their emissions were summed to provide an overall emission rate.

Fugitive emissions from the wastewater impoundments are estimated through mass balance.

5.3 Solid Cyanides Process – Emission Unit 3

The list of the sources and emission point numbers specific to the Solid Cyanides Process is provided in the following table.

Table 5.3

Emission Unit Group No.	Description		Emission Point No.	Control Device	Pollutants
N03 (Dry End)	Process Air Vent (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).		401	None	NO_x, CO, SO_2, PM, VOC, HAP (HCN, Acetonitrile and Acrylonitrile) and NH_3
N01	Process Air Heater Combustion Vent		402	Oxygen Trim System	NO_x, CO, SO_2, PM, and VOC
N03 (Dry End)	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_x, CO, SO_2, PM, VOC, HAP (HCN, Acetonitrile and Acrylonitrile) and NH_3
	Heater Air Vent		405	None	
	Filter Vent		406	None	
N02 (Wet End)	Hotwell Vent		407	None	VOC, HAP (HCN, Acetonitrile and Acrylonitrile),and NH_3
	Feedwell Vent		408	None	
NA	Washwater Accumulation Building Vents		409	None	Insignificant Activities
NA	Tank Truck Loading Spots		NA	None	Insignificant Activities

Emission Unit N01 includes the Process Air Heater (EPN 402).

Emission Unit N02 covers emission points associated with the Wet End of the process, including the following:

- Hotwell Vent – EPN 407
- Feedwell Vent – EPN 408

Emission Unit N03 covers emission points associated with the Dry End of the process, including the following:

- Process Air Vent – EPN 401
- Dust & Fume Scrubber – EPN 404
- Heater Air Vent – EPN 405
- Filter Vent – EPN 406

Operational and Calculation Methodology

The Process Air Heater has a maximum rated heat capacity of 15 MMBtu/hr. The heater is fired with natural gas. Propane is a potential backup fuel in the event of a loss of natural gas supply. Combustion emissions from the Process Air Heater were calculated using AP-42 emission factors for external combustion sources (Section 1.4 Natural Gas Combustion, Tables 1.4-1 through 1.4-3).

The Hotwell collects condensate and non-condensables from equipment associated with the Wet End. Emissions from the Hotwell have been estimated using data collected during stack testing. Maximum emissions result when 100 percent NaCN solution is fed to the process. Emissions of nitriles from the Hotwell have been estimated based on their potential as impurities in the raw material.

Emissions from the Feedwell Vent have been estimated using data gathered using Draegar® tubes to measure concentrations of the constituents of concern. The maximum emissions have been estimated as the measured values plus 20 percent to cover any variation in sampling and emissions.

Emission sources in the Dry End include the Process Air Vent (EPN 401), Dust & Fume Scrubber (EPN 404), Heater Air Vent (EPN 405) and Filter Vent (EPN 406). Maximum emissions from the Process Air Vent result when maximum hourly sodium cyanide solution is fed to the Dry-End Process. Concentrations of pollutants from the Process Air Vent are based on 2004 stack testing data and engineering calculations.

Nitrile emissions limits are based on their potential as impurities in the raw material hydrogen cyanide. These impurities leave the process as emissions in the Process Air Vent (EPN 401) and Wet-End Hotwell Vent (EPN 407).

The Dust & Fume Scrubber (EPN 404) operates with efficiency in excess of 90% in controlling particulate emissions. The efficiency is based on the efficiency curve provided by the manufacturer. Concentrations of pollutants from the Dust & Fume Scrubber are based on 2004 stack testing data and engineering calculations. The maximum gas velocity is based on the capacity of the blower.

Emissions from the Heater Air Vent (EPN 405) are not continuous and in fact rare. The Heater Air Vent had been used primarily, but not solely, during startups and changeovers. Maximum emissions from the Heater Air Vent are based on 200 hours of venting per year.

The Filter Vent (EPN 406) is an alternate vent location for the Process Air Vent. The emission concentrations from the two vents are considered equivalent. Maximum emissions from the Filter Vent result when the maximum hourly rate of sodium cyanide solution is fed to the Dry-End Process. Concentrations of pollutants from the Dust & Fume Scrubber are based on 2004 stack testing data and engineering calculations performed for MACT compliance.

The Filter Vent is normally an intake vent. Typically, flow out the vent is intermittent. However, continuous flow may be experienced for a short duration (less than 24 hours).

5.4 Power Area/Emergency Engines – Emission Units 4/5

The list of the sources and emission point numbers specific to the Power Area is provided in the following table.

TABLE 5.4

Emission Unit Group No.	Description	Emission Point No.	Control Device	Pollutants
P01 and 02	Boilers #1 and #2	501	Oxygen Trim Systems	NO_x, CO, SO_2, PM and VOC
P03	Boiler #3	502		
P04	Boiler #4	503		
P05	Fire Pump Engine #2 – ACRN South Engine	517	None	
P06	Fire Pump Engine #3 – MMA North Engine	518		
P07	Fire Pump Engine #4 – MMA South Engine	519		
P08	HCN Tank Farm Emergency Generator Engine #1	520		
P09	HCN Tank Farm Emergency Generator Engine #2	521		
P10	Generac 755 HP (500 kW) Diesel-Fired Emergency Generator #3	522		
P11	Generac 755 HP (500 kW) Diesel-Fired Emergency Generator #4	523		
Waste Oil Tank			516 (Insignificant Activity)	
Tank #204B: #2 Fuel Oil Tank; 200,000 gal (Out of Service)			Insignificant Activity	
Tank #203B: #2 Fuel Oil Tank; 25,000 gal (Out of Service)			Insignificant Activity	
Air Compressors			Insignificant Activity	
Repair and Maintenance			Insignificant Activity	
Storage Tanks: All Storage Tanks <10,000 gal			Insignificant Activity	
Site Gasoline Tank			Insignificant Activity	
Site Diesel Tank			Insignificant Activity	
Process and Warehouse Building Ventilation (including $MgCO_3$ system)			Insignificant Activity	
Air Tank			Insignificant Activity	
Hydrogen Tank			Insignificant Activity	
Nitrogen Tank			Insignificant Activity	

Each boiler functions as an emissions unit (P01 – P04), and each of the fire pump engines and emergency generator engines are also covered by individual emission unit numbers (P05 – P011).

Operational and Calculation Methodology

Boilers #1 - #4

There are four boilers located in the Power area. Boilers #1 and #2 each have a maximum capacity of 78.7 MMBtu/hr. Boilers 3 and 4 each have a maximum capacity of 155 MMBtu/hr. Boilers #1, #2, and #3 are fired with a combination of natural gas and HCN Absorber Off-Gas (AOG). However, any of the boilers may burn natural gas only. Boiler #4 is natural gas only.

The Power Area boilers operate a maximum of 8,760 hours per year. Combustion emissions from the boilers are calculated using AP-42 emission factors for natural gas external combustion sources (Section 1.4 Natural Gas Combustion) and stack test data on Boiler 3 and AOG analyses.

The maximum annual (consecutive 12-month rolling) emissions have been estimated using previous fuel consumption plus additional AOG and natural gas to represent approximate capacities based on operating experience and adjusted to compensate for any potential error in testing, calculations and/or assumptions.

Fire Pump Engines #2, #3, and #4

The fire pump engines drive the fire pumps in the event of a fire at the facility. Fire Pump Engines #2 (EPN 517) and #4 (EPN 519) are existing engines under 40 CFR Part 63, Subpart ZZZZ. Fire Pump Engine #3 (EPN 518) is a new engine under Subpart ZZZZ and is also subject to 40 CFR Part 60, Subpart IIII. Emissions for these engines were calculated assuming a maximum of 500 hr/yr operation and using AP-42 emission factors (Section 3.3 Gasoline and Diesel Industrial Engines) or manufacturers' emission factors where available.

HCN Tank Farm Emergency Engines #1 and #2

The emergency generator engines drive the emergency generators in the event of a power loss at the HCN Tank Farm. Emergency Generator Engines #1 (EPN 520) and #2 (EPN 521) are existing engines under 40 CFR Part 63, Subpart ZZZZ. Emissions for these engines were calculated assuming a maximum of 500 hr/yr operation and using AP-42 emission factors (Section 3.3 Gasoline and Diesel Industrial Engines) or manufacturers' emission factors where available.

New Generac Emergency Generators #3 and #4

The two new Generac 755 HP (500 kW) diesel-fired emergency generators (Generators #3 and #4), are subject to 40 CFR Part 60, Subpart IIII. Emissions for these engines were calculated assuming a maximum of 500 hr/yr operation and using AP-42 emission factors (Section 3.3 Gasoline and Diesel Industrial Engines) or manufacturers' emission factors where available.

VI. REGULATORY ANALYSIS

A complete listing of applicable Federal, State and local regulations for the entire facility can be found in Appendix A (Regulatory Applicability Table) of this evaluation. The following is a brief applicability review of regulations affecting only the new emergency generators.

6.1. PSD/NSR

- Non-attainment New Source Review (NSR)

  The United States Environmental Protection Agency designated Shelby County in attainment of the national ambient air quality standard for ozone within the Federal Register effective July 25, 2016. Shelby County is in attainment for all NSR pollutants at this time; therefore, NSR is not applicable to this permit action.

- Prevention of Significant Deterioration (PSD) of Ambient Air Quality

  Under PSD an affected source is a facility with emissions exceeding 250 tons per year of any regulated NSR pollutants or emissions exceeding 100 tons per year of any regulated NSR pollutants at sources in specific categories.

  Although allowable nitrogen oxides (NO_x) emissions exceed 250 tons per year for this facility, the emission increases associated with this permit action are well below PSD applicability thresholds; therefore, PSD review is not applicable.

6.2. New Source Performance Standards (NSPS) (40 CFR Part 60)

- **Subpart A**: General Provisions

  Covoro is subject to an NSPS; therefore, NSPS general provisions, as applicable, apply to the facility.

- **Subpart IIII**: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

  The two new Generac 755 HP (500 kW) diesel-fired emergency generators (Generators #3 and #4), permitted under Construction Permit No. 00097-21PC, and the 332 HP diesel-fired Fire Pump Engine #3 (P06)(EPN 518) are subject to 40 CFR Part 60, Subpart IIII as follows:

<table>
<tr><th>Applicable Subparts</th><th>Description</th></tr>
<tr><td>Generac 755 HP Engine only
§60.4202(a)(2)
(Referenced from §60.4205(b))

Fire Pump Engine #3 (332 HP) (P06)(EPN 518) only
§60.4202(d)
(Referenced from §60.4205(c))</td><td>Emission Standards (40 CFR 89.112 – Table 1)
<table><tr><th colspan="3">Pollutant (grams/KW-hr)</th></tr><tr><th>NMHC + NO_X</th><th>CO</th><th>PM</th></tr><tr><td>4.0</td><td>3.5</td><td>0.20</td></tr></table>
Table 4 to Subpart IIII of Part 60 (Applicable Requirements)
<table><tr><th colspan="3">Pollutant (grams/KW-hr)</th></tr><tr><th>NMHC + NO_X</th><th>CO</th><th>PM</th></tr><tr><td>10.5</td><td>3.5</td><td>0.54</td></tr></table></td></tr>
</table>

§60.4202(a)(2)	Emission Standards (40 CFR 89.113 – Smoke Emission Standard) 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.
§60.4206	Period of Compliance Operate and maintain stationary CI ICE that achieve the emission standards as required in §60.4205 over the entire life of the engine.
§60.4207(b)	Diesel Fuel Requirements a) A maximum sulfur content of 15 parts per million (ppm); and b) A minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
§60.4209	Monitoring Requirements a) equip each emergency generator with a non-resettable hour meters to keep records of the hours of operation of each generator
§60.4211(a)	Engine Compliance Requirements a) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; b) Change only those emission-related settings that are permitted by the manufacturer c) Meet the requirements of 40 CFR parts 89 and/or 1068, as they apply.
§60.4211(c)	Engine Compliance Requirements Engines must be certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications
§60.4211(f)(1)	Engine Compliance Requirements (Emergency use) There is no time limit for emergency situations
§60.4211(f)(2-3)	Engine Compliance Requirements (Allowable non-emergency use) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of §60.4211for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of §60.4211 counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2) of §60.4211. (f)(2) allowable uses of emergency engine: a) Maintenance checks; b) Readiness testing; c) Emergency demand response for Energy Emergency Alert Level 2 situations; d) Responding to situations where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency; and (f)(3) allowable uses of emergency engine: Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. 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 §60.4211. Except as provided in paragraph (f)(3)(i) of §60.4211, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
§60.4214(b)	Notification, Reporting, and Recordkeeping Requirements Keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

6.3. National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR Part 61)

There are no NESHAP requirements applicable to this facility under 40 CFR part 61.

6.4. NESHAP - (MACT Standards) (40 CFR Part 63)

- **Subpart A**: General Provisions

  Covoro is subject to several NESHAP standards; therefore, NESHAP general provisions, as applicable, apply to the facility.

- **Subpart YY**: National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic MACT Standards

  Initial affected source notification was submitted on July 9, 2003. The Pre-Compliance Assessment and requests for alternative monitoring parameters was submitted on March 23, 2004. Stack testing was performed during July and August 2004. Due to the inability to satisfactorily sample the inlet process vents of two Sodium Cyanides Dry-End Scrubbers using EPA methods due to the system configuration, a supplemental request for alternate compliance demonstration was submitted on September, 27, 2004. Additionally, engineering calculations in accordance with §63.1103(g)(5)(iii and iv) were used to demonstrate maximum flow rates for the Start-Up and Run Flares in the HCN production unit due to safety concerns associated with the referenced test method. The compliance date for the facility was July 12, 2005.

  Covoro operates two Cyanide Chemical Manufacturing Facilities subject to subpart YY. This subpart is applicable to the Hydrogen Cyanide (HCN) Process Area (EU 2) (Andrussow process) and the Cyanide Solids Process Area (EU 3), which produces sodium cyanide and potassium cyanide. Both operations must demonstrate $\geq$ 98% control of certain combinations of process vents, provide controls on storage tanks, meet requirements for loading racks and wastewater facilities, maintain leak detection and repair measures, and utilize maintenance wastewater, start-up, shutdown and malfunction plans.

  The first operation produces HCN via the Andrussow process. This process includes the combustion of methane, the recovery and removal of excess ammonia and the absorption of HCN via water. The HCN absorber off gas is used as fuel for the HCN process and powerhouse boilers. Excess Absorber Off Gas (AOG) containing HCN and other byproduct gases are flared in the HCN process Run Flare. This process also uses a Start-Up Flare to control materials and process gases during start-ups, shutdowns, and de-inventorying raw material piping. The HCA is stored in cooled storage tanks and transferred to rail tank cars, on-site customers and to the on-site storage tank farm. Vapors from the storage tanks, product transfers, and associated pipelines are collected and routed to the tank farm scrubber. Effluent and byproducts from this process can be routed to the HCN process recovery or the facility's wastewater collection and treatment system. A tank farm ignitor flare is also back-up to the tank farm scrubber if needed.

The second operation produces solid sodium cyanide (SSC) via a reaction of HCN, sodium hydroxide and/or potassium hydroxide. A cyanide slurry is filtered and dried in a closed vent system. The dried product is then separated and prepared for distribution via containers, tank cars, or trucks. The SSC process uses an air conveyance system with a demister/recycle scrubber to recycle air throughout the closed vent system.

Washwater from this process is recycled through the HCN process or treated in the wastewater treatment and collection system.

§63.1103 General compliance, reporting, and recordkeeping provisions

(a) Table 3 of this subpart specifies the provisions of subpart A that apply and those that do not apply to owners and operators of sources subject to subparts F, G, and H of this part.

(b) Initial performance tests and initial compliance determinations shall be required only as specified in subparts G and H of this part.

1) Performance tests and compliance determinations shall be conducted according to the schedule and procedures in §63.7(a) of subpart A of this part and the applicable sections of subparts G and H of this part.

Due to the inability to satisfactorily sample the inlet process vents of two Sodium Cyanides Dry-End Scrubbers using EPA methods due to the system configuration, a supplemental request for alternate compliance demonstration was submitted on September, 27, 2004. Additionally, engineering calculations in accordance with §63.1103(g)(5)(iii and iv) were used to demonstrate maximum flow rates for the Start-Up and Run Flares in the HCN production unit due to safety concerns associated with the referenced test method.

§63.1103(g)(5)(iii) states, if a facility controls process vent emissions during startup, shutdown, and malfunction by using a flare (HCN process Start-Up Flare (Emission Point No. (EPN) 101), an owner or operator is not required to perform flow rate and heat content testing as specified in §63.987(b)(3)(ii) and (iii). In lieu of performing flow rate and heat content testing, an owner or operator is required to submit engineering calculations that substantiate that a flare meets the applicable heat content or flow rates, or provide data from a compliance assessment that the flare is in compliance under worst case conditions (e.g., maximum operating conditions).

§63.1103(g)(5)(iv) states, if flare velocity and net heating value testing, specified in §63.11(b)(6)(ii) and (b)(7)(i), would create an unreasonable hazard for testing personnel, an owner or operator is allowed to submit engineering calculations that substantiate vent stream velocity and heat content of a flare in lieu of test data. This is applicable to the HCN process Start-Up Flare (EPN 101), HCN process Run Flare (EPN 102) and HCN Tank Farm Flare (EPN 108).

(g) *Cyanide chemicals manufacturing applicability, definitions, and requirements*

(1) *Applicability*—(i) *Affected source.* For the cyanide chemicals manufacturing source category, the affected source shall include each cyanide chemicals manufacturing process unit located at a major source, as defined in section 112(a) of the Act. The affected source shall also include all waste management units, maintenance wastewater, and equipment (as defined in §63.1101) that contain or contact cyanide chemicals that are associated with the cyanide chemicals manufacturing process unit.

3) *Requirements.* Table 9 to this section specifies the cyanide chemicals manufacturing standards applicable to existing and new sources. Applicability assessment procedures and methods are specified in §63.1104. An owner or operator of an affected source is not required to perform applicability tests or other applicability assessment procedures if they opt to comply with the most stringent requirements for an applicable emission point pursuant to this subpart. General compliance, recordkeeping, and reporting requirements are specified in §§63.1108 through 63.1112.

A. - Andrussow HCN Process Vents

Emission Unit CO1

Emission Unit CO1 covers emission points in the HCN Process including the Start-Up and Run Flares and process heaters.

Process Heaters (Stacks ID 103, 104 and 105) and Powerhouse Boilers (Stacks ID 501, 502 and 503) that use Absorber Off Gas (AOG) as fuel are excluded from the standards by §63.1101, which 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 (National Emission Standards for Hazardous Air Pollutants for Industrial for Institutional, Commercial, and Industrial Boilers and Process Heaters) and regulated under City of Memphis Code Section 16-80 [Reference Rules and Regulations of Tennessee, Rule 1200-3-18-.40 (Air Oxidation Processes in the Synthetic Organic Chemical Manufacturing Industry).

Table 9 to subpart YY (Item b) requires that emissions from Andrussow HCN process vents, must meet the following:

(i) Reduce overall annual emissions of total HAP from the collection of process vents from continuous unit operations in the process by 98 weight-percent in accordance with paragraph (g)(4) of this section. Any control device used to reduce emissions from one or more process vents from continuous unit operations in the process unit must meet the applicable requirements specified in §63.982(a)(2); or

(ii) Reduce emissions of total HAP from each process vent from a continuous unit operation in the process unit by using a flare meeting the requirements specified in §63.982(b);

(iii) Reduced by 98% by weight or to a concentration of 20 ppm 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).

Andrussow HCN process vents must comply with the requirements of §63.982(b) that requires emissions be vented through a closed vent system to a flare meeting the requirements of §63.983 for closed vent systems, §63.987 for flares, §63.987(a-c) for provisions regarding flare compliance assessments, the monitoring requirements therein, and the applicable recordkeeping and reporting requirements in §63.998 and §63.999.

The Start-Up (Air Assist) Flare (EPN 101) is used for the following five operations:

1) Pilot Gas System operation (Pilot);
2) Startup of converter reactor (Case 1);
3) Shutdown of converter reactor (Case 2);
4) Flaring of converters for maintenance (Case 3); and
5) De-inventorying of the Ammonia pipeline and supply system (Case 4)

The Run Flare (EPN 102) is used to control excess HCN Absorber Off Gas (AOG) generated during HCN process operations.

Per §63.987 flares subject the subpart SS shall meet the performance requirements in §63.11(b) (General Provisions) as follows:

1) The flare must be monitored to assure that it is operating and maintained in conformance with flare design;
2) It may be non-assisted;
3) It shall be operating at all times when emissions are vented to the flare;
4) It shall be designed and operated with no visible emissions;
5) It shall be operated with a flame present at all times;

The Start-Up Flare (EPN 101) complies with §63.11(b)(6)(i) that states:

"Flares shall be used that have a diameter of 3 inches or greater, are non-assisted, have a hydrogen content of 8.0 percent (by volume) or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec)"; and

The Run Flare (EPN 102) complies with §63.11(b)(6)(ii) and (b)7 that state:

§63.11(b)(6)(ii)

"Flares shall be used only with the net heating value of the gas being combusted

at 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted at 7.45 M/scm (200 Btu/scf) or greater if the flares is non-assisted. The net heating value of the gas being combusted in a flare shall be calculated using the following equation" (See §63.11(b)(6)(ii) for equation)

§63.11(b)(7)

"(i) Steam-assisted and non-assisted flares shall be designed for and operated with an exit velocity less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (b)(7)(ii) and (b)(7)(iii) of this section. The actual exit velocity of a flare shall be determined by dividing by the volumetric flow rate of gas being combusted (in units of emission standard temperature and pressure), as determined by Test Method 2, 2A, 2C, or 2D in appendix A to 40 CFR part 60 of this chapter, as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

(ii) Steam-assisted and non-assisted flares designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec), are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) Steam-assisted and non-assisted flares designed for and operated with an exit velocity, as determined by the method specified in paragraph (b)(7)(i) of this section, less than the velocity Vmax, as determined by the method specified in this paragraph, but less than 122 m/sec (400 ft/sec) are allowed. The maximum permitted velocity, Vmax, for flares complying with this paragraph shall be determined by the following equation:" (See §63.11(b)(7) for equation)

§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.

§63.987(c) specifies that a device be capable of continuously detecting that at least one operating pilot or the flare flame is present. Flare flame monitoring and compliance records shall be kept as specified in §63.998(a)(1) and reported as specified in §63.999(a).

§63.998(a)(ii) states that the facility must keep up to date records and readily accessible hourly monitoring records of whether the monitor is continuously operating and whether the flare flame or at least all the pilot fames are present. Part (iii) requires records of times the flare flame or all pilot flames are absent and periods during which the monitor is not operating.

A.2 - Storage Vessels:

Emission Unit C02

Emission Unit C02 covers emission points located in the HCN Tank Farm Area. HCN product is stored in four (4) continuously cooled tanks.

Table 9 to subpart YY requires that emissions from storage vessels that contain HCN, must meet the following:

(i) Reduce emissions of hydrogen cyanide by using a flare meeting the requirements of §63.982(b); or

(ii) Reduce emissions of hydrogen cyanide by 98 weight-percent, 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).

The emission reduction is achieved by using primarily a scrubber using once-thru well water to a packed column and a flare as back-up. The fresh water feed rate is maintained greater than that required to assure greater than 98% control efficiency. The minimum make-up water flow rate to the scrubber shall not be less than 15 gallons per minute (gpm) during maximum operating condition 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.

§63.982(c)(1) covers the Tank Farm Vent Scrubber (EPN 109) since it is a closed vent system and a non-flare control device. Emissions from the scrubber must meet the requirements in §63.983 for closed vent systems, the applicable recordkeeping and reporting requirements in §63.998 and §63.999. Only §63.982(c)(1) applies to the HCN Storage Tanks (4). This states that the system shall meet the requirements of §63.985 for non-flare control devices and the applicable recordkeeping and reporting requirements in §63.998 and §63.999. No other provisions of subpart YY apply to the HCN Storage Tanks unless specifically required in the monitoring plan submitted under §63.985(c).

The HCN Tank Farm Flare (EPN 108) is used to combust HCN storage tank vapors and vapor generated during product line purging. The Tank Farm Flare [§63.982(b)] (EPN 108) serves as a backup for the Tank Farm Vent Scrubber [§63.982(c)(1)] (EPN 109).

The HCN Tank Farm Flare (EPN 108) must comply with the requirements of §63.982(b) that requires emissions be vented through a closed vent system to a flare meeting the requirements of §63.983 for closed vent systems, §63.987 for flares, §63.987(a-c) for provisions regarding flare compliance assessments, the monitoring requirements therein, and the applicable recordkeeping and reporting requirements in §63.998 and §63.999.

Per §63.987 flares subject the subpart SS shall meet the performance requirements in §63.11(b) (General Provisions) as follows:

1) The flare must be monitored to assure that it is operating and maintained in conformance with flare design;
2) It may be non-assisted;
3) It shall be operating at all times when emissions are vented to the flare;
4) It shall be designed and operated with no visible emissions;
5) It shall be operated with a flame present at all times; and
6) It complies with §63.11(b)(6)(i) that states:

   "Flares shall be used that have a diameter of 3 inches or greater, are non-assisted, have a hydrogen content of 8.0 percent (by volume) or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec)";

§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.

§63.987(c) specifies that a device be capable of continuously detecting that at least one operating pilot or the flare flame is present. Flare flame monitoring and compliance records shall be kept as specified in §63.998(a)(1) and reported as specified in §63.999(a).

§63.998(a)(ii) states that the facility must keep up to date records and readily accessible hourly monitoring records of whether the monitor is continuously operating and whether the flare flame or at least all the pilot fames are present. Part (iii) requires records of times the flare flame or all pilot flames are absent and periods during which the monitor is not operating.

A.3 – HCN Process Wastewater

The only other affected process vent is on a small recycle tank known as EP-96. The tank vent is an insignificant activity. The tank receives cyanide bearing washwater from the Solid Cyanides Process. The washwater is high in pH and therefore aqueous sodium or potassium cyanide. These compounds are recovered by acidification into the tank to convert them to aqueous HCN and then fed back into the process. On occasion, if carbonates build up, gas can build in the tank and require venting. The cyanide component is treated as wastewater in the permitted wastewater collection and treatment system (Collectively referenced as EPN 110) c. Since no measured control is available and venting is not of a sufficient duration to test, maximum uncontrolled HCN determined by engineering calculations is used in the demonstration of HAP emission reduction per §63.1103(g)(4)

The maximum annual uncontrolled Organic HAP (HCN) for the HCN Process, including the EP-96 tank vent, has been demonstrated to be 99.3% by Covoro (Reference NOCS - Section 2. Pdf).

A.4 – Solid Cyanides Process

Emission Unit N01 (Heater Combustion Vent)

This natural gas-fired non-contact process heater vent is not affected by subpart YY because the gas stream discharges less than or equal to 0.005 weight-percent total organic HAP. This is excluded as a "Process Vent" by definition within §63.1101.

Emission Unit N02 (Solid Cyanides Process Wet End)

Emission Unit N02 consists of a Hotwell Vent (EPN 407) and Feedwell Vent (EPN 408).

The Hotwell Vent (EPN 407) is a wastewater process vent excluded from subpart YY under §63.1103(g)(2) and by definition under §63.1101.

§63.1103(g)(2) states wastewater streams containing discarded wastewater from the sodium cyanide production process are not considered to be part of the wet-end sodium cyanide process. Discarded wastewater that is no longer used in the production process is considered to be process and/or maintenance wastewater. Vents from process and maintenance wastewater operations are not wet-end process vents. Gas streams from wastewater streams subject to subpart YY are excluded as a "Process Vent" by definition within §63.1101.

The Feedwell Vent (EPN 408) is an aqueous solid cyanide solution surge control vessel and is defined as a storage vessel under §63.1101. Only storage vessels containing refined hydrogen as defined in §63.1103(g) are subject to subpart YY; therefore, this unit is excluded.

Sodium cyanide process unit means a process unit that produces sodium cyanide by reacting hydrogen cyanide and sodium hydroxide via the neutralization, or wet, process. A sodium cyanide process unit begins at the unit operation where refined hydrogen cyanide is reacted with sodium hydroxide and ends at the point the solid sodium cyanide product is shipped offsite or used as a raw material in a downstream process.

Emission Unit N03 (Solid Cyanides Process Dry End)

Emission Unit N03 consists of a Process Air Vent (EPN 401), Dust & Fume Scrubber (EPN 404), Recycle/Demister Scrubbers (exhausting through EPN 401), Heater Air Vent (EPN 405), and Filter Vent (EPN 406).

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 (EPN 401).

The Dust & Fume Scrubber (EPN 404) was installed to prevent personnel exposure to dusts and fumes inside the process building. This unit exhausts to atmosphere

Emissions from the Heater Air Vent (EPN 405) valve occur rarely. The Heater Air Vent valve can be used primarily, but not solely, during startups and changeovers.

The Filter Air Vent (EPN 406) normally pulls ambient air into the system and is not an exhaust point. However, during unusual conditions, gas in the recycle loop can be exhausted through this vent.

Table 9 to subpart YY requires emissions from these process vents meet the following:

(i) Reduce overall annual emissions of sodium cyanide from the collection of process vents from continuous unit operations in the process unit by 98 weight-percent in accordance with paragraph (g)(4) of this section. Any control device used to reduce emissions from one or more process vents from continuous unit operations in the process unit must meet the applicable requirements of §63.982(a)(2).

§63.982(c)(2) covers the Dust & Fume Scrubber (EPN 404) since it is a closed vent system and a non-flare control device. Emissions from the scrubber must meet the requirements in §63.983 for closed vent systems, the applicable recordkeeping and reporting requirements in §63.998 and §63.999.

Table 9 to §63.1103(g) of subpart YY
What Are My Requirements if I Own or Operate a Cyanide Chemicals Manufacturing Existing or New Affected Source?

If you own or operate . . .	**And if . . .**	**Then you must . . .**
(a) A storage vessel	(1) The storage vessel contains refined hydrogen cyanide	(i) Reduce emissions of hydrogen cyanide by using a flare meeting the requirements of §63.982(b); or (ii) Reduce emissions of hydrogen cyanide by 98 weight-percent, 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). ***Scrubber (EPN 109) – Compliance Demonstration Requirements*** ✓ ***§63.983(a)(3)(ii) and §63.998(d)(1)(ii)(B) – Monthly inspection of vent scrubber bypass valve;*** ✓ ***§63.983(b)(1) – Annual inspection for visual, audible and olfactory;*** ✓ ***§63.983(d) – Leak repair provisions;*** ✓ ***§63.985(c) – Vent scrubber monitoring plan;*** ✓ ***§63.990(c)(1) requires monitoring of scrubber liquid temperature and specific gravity. Covoro uses continuous fresh water make-up and does not utilize batches to maintain control efficiency; therefore, liquid temperature and specific gravity are not effective monitoring parameters for this system.*** ***Covoro uses the following alterative criteria, as allowed under § 63.996(b)(1) and (d)(2), for scrubber compliance monitoring:*** ***1) Utilize Continuous water make-up; and*** ***2) Minimum scrubber water flow rate***

		<u>Flare (EPN 108) – Compliance Demonstration Requirements</u> ✓ ***The HCN Tank Farm Flare [§63.982(b)] (EPN 108) is used to combust HCN storage tank vapors and vapor generated during product line purging. The Tank Farm Flare [§63.982(b)] (EPN 108) serves as a backup for the Tank Farm Vent Scrubber [§63.982(c)(1)] (EPN 109).*** ***40 CFR Part 63, subpart SS, §63.987 applicable flare compliance demonstration requirements are as follows:*** ✓ ***§63.11(b) – Flares shall be operated with no visible emissions, operated at all times when emissions are vented to them, and have a flame present at all times;*** ✓ ***§63.11(b) – Heat content and maximum tip velocity specifications of §63.11(b)(6)(ii) and (b)(7) or (b)(8);*** ✓ ***§63.987(b)(3)(i) – EPA Method 22 Visible Emission testing (2 hour);*** ✓ ***§63.987(c) – Continuously detecting that at least one operating pilot or the flare flame is present; and*** ✓ ***§63.1103(g)5(iv) – Engineering calculations for flare velocity and net heating value in lieu of testing required in §63.987(b)(3)(ii) due to unreasonable hazard for testing personnel.***
(b) A process vent from a continuous unit operations in an **Andrussow**, BMA, or Sohio hydrogen cyanide process unit		(i) Reduce overall annual emissions of total HAP from the collection of process vents from continuous unit operations in the process by 98 weight-percent in accordance with paragraph (g)(4) of this section. Any control device used to reduce emissions from one or more process vents from continuous unit operations in the process unit must meet the applicable requirements specified in §63.982(a)(2); or
		(ii) Reduce emissions of total HAP from each process vent from a continuous unit operation in the process unit by using a flare meeting the requirements specified in §63.982(b); or
		(iii) Reduce emissions of total HAP from each process vent from a continuous unit operation in the process unit by 98 weight-percent 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)(2) or (d). ***<u>Flare (Stacks ID 101 and 102) – Compliance Demonstration Requirements</u>*** ***40 CFR Part 63, subpart SS, §63.987 applicable flare compliance demonstration requirements are as follows:*** ✓ ***§63.11(b) – Flares shall be operated with no visible emissions, operated at all times when emissions are vented to them, and have a flame present at all times;*** ✓ ***§63.11(b) – Heat contents and maximum tip velocity specifications of §63.11(b)(6)(i(EPN 101) or ii(EPN 102) and (b)(7)or(b)(8)(EPN 101);*** ✓ ***§63.11(b) – Greater than 8.0% H_2 and maximum exit velocity by engineering calculation (EPN 102 only)*** ✓ ***§63.987(b)(3)(i) – EPA Method 22 Visible Emission testing (2 hour);*** ✓ ***§63.987(c) – Continuously detecting that at least one operating pilot or the flare flame is present; and*** ✓ ***§63.1103(g)5(iv) – Engineering calculations for flare velocity and net heating value in lieu of testing required in §63.987(b)(3)(ii) due to unreasonable hazard for testing personnel.***
(c) One or more wet end process vents, as defined in paragraph (g)(2) of this section, in a sodium cyanide process unit		(i) Reduce overall annual emissions of total HAP from the collection of process vents from continuous unit operations in the process unit by 98 weight-percent in accordance with paragraph (g)(4) of this section. Any control device used to reduce emissions from one or more process vents from continuous unit operations in the process unit must meet the applicable requirements of §63.982(a)(2); or
		(ii) Reduce emissions of total HAP from each wet-end process vent in the process unit by using a flare meeting the requirements of §63.982(b); or
		(iii) Reduce emissions of total HAP from each wet-end process vent by 98 weight-percent, or to a concentration of 20 parts per million by volume, by venting emissions through a closed vent system and any combination of control devices meeting the requirements of §63.982(c)(2) or (d). ✓ ***The Hotwell Vent (EPN 407) is a wastewater process vent excluded***

		from subpart YY under §63.1103(g)(2) and by definition under §63.1101. ***§63.1103(g)(2) wastewater streams containing discarded wastewater from the sodium cyanide production process are not considered to be part of the wet-end sodium cyanide process. Discarded wastewater that is no longer used in the production process is considered to be process and/or maintenance wastewater. Vents from process and maintenance wastewater operations are not wet-end process vents.*** ✓ ***Gas streams from wastewater streams subject to subpart YY are excluded as a "Process Vent" by definition within §63.1101.*** ***The Feedwell Vent (EPN 408) is an aqueous solid cyanide solution surge control vessel and is defined as a storage vessel under §63.1101. Only storage vessels containing refined hydrogen as defined in §63.1103(g) are subject to subpart YY; therefore, this unit is excluded.***
(d) One or more dry end process vents, as defined in paragraph (g)(2) of this section, in a sodium cyanide process unit		(i) Reduce overall annual emissions of sodium cyanide from the collection of process vents from continuous unit operations in the process unit by 98 weight-percent in accordance with paragraph (g)(4) of this section. Any control device used to reduce emissions from one or more process vents from continuous unit operations in the process unit must meet the applicable requirements of §63.982(a)(2). ***Recycle/Demister Scrubbers venting through EPN 401 and Dust & Fume Scrubber (EPN 404) – Compliance Demonstration Requirements*** ✓ ***§63.983(b and c) – Inspection;*** ✓ ***§63.983(c and d) – Leak repair provisions;*** ✓ ***§63.990(c)(1) requires monitoring of scrubber liquid temperature and specific gravity. Covoro uses continuous fresh water make-up and does not utilize batches to maintain control efficiency; therefore, liquid temperature and specific gravity are not effective monitoring parameters for this system.*** ***Covoro uses the following alterative criteria, as allowed under § 63.996(b)(1) and (d)(2), for scrubber compliance monitoring:*** ***1) Minimum make-up rate; and*** 2) ***Minimum scrubber water flow rate***
		(ii) Reduce emissions of sodium cyanide from each dry-end process vent in the process unit by 98 weight-percent by venting emissions through a closed vent system to any combination of control devices meeting the requirements of §63.982(c)(2) or (d).
(e) A transfer rack	(1) The transfer rack is used to load refined hydrogen cyanide into tank trucks and/or rail cars	(i) Reduce emissions of hydrogen cyanide by using a flare meeting the requirements of §63.982(b); or (ii) Reduce emissions of hydrogen cyanide by 98 weight-percent, or to a concentration of 20 parts per million by volume, whichever is less stringent, by venting emissions through a closed vent system to any combination of control devices meeting the requirements specified in §63.982(c)(1), (c)(2), or (d). ***Not applicable because Covoro has removed all railcar loading/unloading processes associated with the HCN process. Cyanide is manufactured internally and is either used on-site in the Solid Cyanides process or piped to on-site tenants, rather than being transported on-site via railcar or loaded into railcars for transport off-site.***
(f) A new cyanide chemicals manufacturing process unit that generates process wastewater	(1) The process wastewater is from HCN purification, ammonia purification, or flare blowdown	(i) Achieve a combined removal and control of HAP from wastewater of 93 weight-percent. ***Not applicable.***
(g) A cyanide chemicals manufacturing process unit that generates maintenance wastewater	(1) The maintenance wastewater contains hydrogen cyanide or acetonitrile	(i) Comply with the wastewater provisions of §63.1106(b).
(h) An item of equipment listed in §63.1106(c)(1) that transports or contains wastewater liquid streams	(1) The item of equipment meets the criteria specified in §63.1106(c)(1) through (3) and either (c)(4)(i) or (ii)	(i) Comply with the requirements in Table 35 of subpart G of this part. ***This not applicable because the total annual average concentration of Table 9 compounds (Appendix of 40 CFR Part 63, Subpart G) in the wastewater streams***

from a cyanide chemicals manufacturing process unit		***from these processes is less than 10,000 parts per million by weight at all times and be less than 1,000 parts per million by weight when the annual average flow rate is greater than or equal to 10 liters per minute. This meets the definition of Group 2 wastewater streams within §63.1106(c).*** ***§63.1106(a) requires compliance with §§63.132 through 63.148. The requirements for Group 2 wastewater streams within §63.132 is to comply with the applicable recordkeeping and reporting requirements specified in §§ 63.146(b)(1) (Notification of Compliance Status Report) and 63.147(b)(8).***
(i) Equipment, as defined under §63.1101	(1) The equipment contains or contacts hydrogen cyanide and operates equal to or greater than 300 hours per year	(i) Comply with either subpart TT or UU of this part, and paragraph (g)(5) of this section, with the exception that open-ended lines that contain or contact hydrogen cyanide are exempt from any requirements to install a cap, plug, blind flange, or second valve to be capped. ***The facility complies with 40 CFR Part 63, subpart TT***

§63.1106 Wastewater Provisions

Emission Unit N04 (Washwater/Wastewater Operations)

(a) *Process wastewater*. Except as specified in paragraphs (a)(1) through (a)(16) and paragraph (d) of this section, the owner or operator of each affected source shall comply with the HON process wastewater requirements in §§63.132 through 63.148.

Process wastewater from the HCN and Solid Cyanides Processes are collected in the Wastewater Collection System (EPN 110) and then treated in the Trade Waste System. EPN 110 is an affected source as defined in §63.1106. Compliance with Table 35 of 40 CFR Part 63, subpart G, as required in §63.1106(c) of subpart YY and § 63.149(a) of subpart G, is not applicable because the total annual average concentration of Table 9 compounds (Appendix of 40 CFR Part 63, Subpart G) (Primarily Acetonitrile and Acrylonitrile) in the wastewater streams from these processes is less than 10,000 parts per million by weight at all times and be less than 1,000 parts per million by weight when the annual average flow rate is greater than or equal to 10 liters per minute. This meets the definition of Group 2 wastewater streams within §63.1106(c).

§63.1106(a) requires compliance with §§63.132 through 63.148. The requirements for Group 2 wastewater streams within §63.132 is to comply with the applicable recordkeeping and reporting requirements specified in §63.146(b)(1) (Notification of Compliance Status Report) and 63.147(b)(8) as follows:

(i) Process unit identification and description of the process unit.

(ii) Stream identification code.

(iii) For existing sources, concentration of table 9 compound(s) in parts per million, by weight. For new sources, concentration of table 8 and/or table 9 compound(s) in parts per million, by weight. Include documentation of the methodology used to determine concentration.

(iv) Flow rate in liter per minute.

Maintenance Wastewater

(b) *Maintenance wastewater.* The owner or operator of each affected source shall comply with the HON maintenance wastewater requirements in §63.105.

Maintenance Wastewater Requirements within §63.105 are as follows:

a) Each owner or operator of a source subject to this subpart shall comply with the requirements of paragraphs (b) through (e) of this section for maintenance wastewaters containing those organic HAP's listed in table 9 of subpart G of this part.

b) The owner or operator shall prepare a description of maintenance procedures 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). The descriptions shall:

(1) Specify the process equipment or maintenance tasks that are anticipated to create wastewater during maintenance activities.

(2) Specify the procedures that will be followed to properly manage the wastewater and control organic HAP emissions to the atmosphere; and

(3) Specify the procedures to be followed when clearing materials from process equipment.

c) The owner or operator shall modify and update the information required by paragraph (b) of this section as needed following each maintenance procedure based on the actions taken and the wastewaters generated in the preceding maintenance procedure.

d) The owner or operator shall incorporate the procedures described in paragraphs (b) and (c) of this section as part of the startup, shutdown, and malfunction plan required under § 63.6(e)(3).

e) The owner or operator shall maintain a record of the information required by paragraphs (b) and (c) of this section as part of the startup, shutdown, and malfunction plan required under § 63.6(e)(3) of subpart A of this part.

The facility maintains and updates maintenance procedures for the management of wastewaters generated from the emptying and purging of equipment in the process during maintenance turnaround and other routine maintenance periods within the SSM Plans for the HCN and Solid Cyanides Processes.

§63.1107 Equipment Leaks

The facility complies with 40 CFR Part 63, subpart TT, Leak Detection and Repair (LDAR) requirements.

§63.1108 Compliance with standards and operation and maintenance requirements

Refer to regulation.

§63.1109 Recordkeeping requirements

Refer to regulation.

§63.1110 Reporting requirements

Refer to regulation.

§63.1111 Startup, Shutdown, and Malfunction (SSM)

The facility maintains an SSM Plan and operates in accordance with 63.1111 as detailed below:

(a) *Startup, shutdown, and malfunction plan.* Before July 6, 2023, the requirements of this paragraph (a) apply to all affected sources except for acrylic and modacrylic fiber production affected sources and polycarbonate production affected sources. On and after July 6, 2023, the requirements of this paragraph (a) apply to all affected sources except for acrylic and modacrylic fiber production affected sources, ethylene production affected sources, and polycarbonate production affected sources.

(1) *Description and purpose of plan.* The owner or operator of an affected source shall develop a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the affected source during periods of startup, shutdown, and malfunction. This plan shall also include a program of corrective action for malfunctioning process and air pollution control equipment used to comply with relevant standards under this subpart. The plan shall also address routine or otherwise predictable CPMS malfunctions. This plan shall be developed by the owner or operator by the affected source's compliance date under this subpart. The requirement to develop this plan shall be incorporated into the source's title V permit. This requirement is optional for equipment that must comply with subparts TT or UU under this subpart. It is not optional for equipment equipped with a closed vent system and control device subject to this subpart and subpart SS. The purpose of the startup, shutdown, and malfunction plan is described in paragraphs (a)(1)(i – ii)of this section.

(i) To ensure that owners or operators are prepared to correct malfunctions as soon as practical after their occurrence, in order to minimize excess emissions of regulated organic HAP; and

(ii) To reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).

(2) Operation of source. During periods of startup, shutdown, and malfunction, the owner or operator of an affected source subject to this subpart YY shall operate and maintain such affected source (including associated air pollution control equipment and CPMS) in a manner consistent with safety and good air pollution control practices for minimizing emissions to the extent practical. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable 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 (including the startup, shutdown, and malfunction plan required by this section), review of operation and maintenance records, and inspection of the source.

- **Subpart EEEE**: National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)

  This Subpart is applicable to organic liquids distribution (non-gasoline) operations at major sources of HAP emissions. [40 CFR §63.2330].

  Per 40 CFR §63.2330(c), organic liquid distribution operations do not include the activities and equipment, including product-loading racks, used to process, store, or transfer organic liquids at facilities listed in paragraph (1) and (2) below.

  1) Oil and natural gas production field facilities, as the term "facility" is defined in 40 CFR §63.761 of subpart HH.

  2) Natural gas transmission and storage facilities, as the term "facility" is defined in 40 CFR §63.1271 of subpart HHH.

  Covoro meets the description of source category of this Subpart.

  40 FR §63.2338; what parts of my plant does this subpart cover?

  (b) Except as provided in paragraph (c) of this section, the affected source is the collection of activities and equipment used to distribute organic liquids into, out of, or within a facility that is a major source of HAP.

  The affected source is composed of:

1) All storage tanks storing organic liquids.

2) All transfer racks at which organic liquids are loaded into or unloaded out of transport vehicles and/or containers.

3) All equipment leak components in organic liquids service that are associated with pipelines, except as provided in paragraph (c)(2) of this section, and with storage tanks and transfer racks storing, loading, or unloading organic liquids.

4) All transport vehicles while they are loading or unloading organic liquids at transfer racks.

(c) The equipment listed in paragraphs (c)(1) through (4) of this section and used in the identified operations is excluded from the affected source.

1) Storage tanks, transfer racks, and equipment leak components that are part of an affected source under another 40 CFR part 63 national emission standards for hazardous air pollutants regulation.

2) Equipment leak components associated with pipelines that transfer organic liquids directly to or from storage tanks subject to another 40 CFR part 63 NESHAP or to or from non-tank process unit components (*e.g.*, process reactors).

Non-permanent storage tanks, transfer racks, and equipment leak components used in special situation distribution loading and unloading operations (such as maintenance or upset liquids management).

3) Storage tanks, transfer racks, and equipment leak components used to conduct maintenance activities, such as stormwater management, liquid removal from tanks for inspections and maintenance, or changeovers to a different liquid stored in a storage tank.

According to this paragraph, the storage tanks, transfer racks, and equipment leak components of the HCN, solid cyanides, and aminonitrile processes are not subject to requirements of this Subpart since the HCN and solid cyanides processes are subject to Subpart YY and the aminonitrile process is subject to Subpart FFFF of 40 CFR Part 63.

In conclusion, this Subpart is not applicable.

- **Subpart FFFF**: National Emission Standard for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing

This subpart is applicable to the Aminonitriles (AN) Process Area (EU 1).

This is a batch process designed to produce a family of aminonitrile products including:

- ✓ 2-amino-2,4-dimethyl-pentanenitrile
- ✓ 2-amino-2-methyl-propanenitrile
- ✓ 2-amino-2-methyl-butane
- ✓ 1-amino-cyclohexane carbonitrile

Process raw materials include hydrogen cyanide (HCN), ammonia (NH_3), and the product specific ketone. The AN Process consists of a single reaction vessel equipped with external heat exchanger exhausting to the AN flare (Emission Point 001). There is also an emergency vent atmosphere. Three product tanks are used for product storage and a 90-day RCRA hazardous waste accumulation tank used for temporary storage of process wastewaters also exhaust to the AN flare (Emission Point 001).

§63.2520 What reports must I submit and when?

(a) You must submit each report in Table 11 to subpart FFFF that applies to you.

Covoro submitted an initial affected source notification (Reference Table 11) to the Department and United States Environmental Protection Agency (USEPA) on February 16, 2004. Covoro later submitted a pre-compliance report (Reference §63.2520(c) and Table 11) on November 9, 2007 and subsequently a notification of compliance status report (Reference §63.2520(d) and Table 11) on October 3, 2008.

§63.2450 What are my general requirements for complying with this subpart?

(a) General

(2) Beginning no later than the compliance dates specified in §63.2445(g), paragraph (a)(1) of this section no longer applies. Instead, you must be in compliance with the emission limits and work practice standards in Tables 1 through 7 to this subpart at all times, and you must meet the requirements specified in §§63.2455 through 63.2490 (or the alternative means of compliance in §63.2495, §63.2500, or §63.2505), except as specified in paragraphs (b) through (v) of this section. You must meet the notification, reporting, and recordkeeping requirements specified in §§63.2515, 63.2520, and 63.2525.

Table 1: Not applicable because this is a batch process.
Table 2: Not applicable because there are no Group 1 batch process vents or vents that contain ethylene oxide
Table 3: Not applicable because the facility does not emit hydrogen halide and halogen HAPs or HAP metals.
Table 4: Not applicable because there are no Group 1 storage tanks or tanks that contain ethylene oxide.
Table 5: Not applicable because there are no Group 1 transfer racks.
Table 6: Applicable to process equipment leaks as follows:

For all . . .	And that is part of . . .	
1. Equipment that is in organic HAP service	a. Any MCPU	i. Comply with the requirements of subpart UU of this part and the requirements referenced therein, except as specified in §63.2480(b) and (d) through (f); or

		ii. Comply with the requirements of subpart H of this part and the requirements referenced therein, except as specified in §63.2480(b) and (d) through (f); or
		iii. Comply with the requirements of 40 CFR part 65, subpart F, and the requirements referenced therein, except as specified in §63.2480(c), and (d) through (f).
2. Equipment that is in organic HAP service at a new source	a. Any MCPU	i. Comply with the requirements of subpart UU of this part and the requirements referenced therein, except as specified in §63.2480(b)(6) and (7), (e), and (f); or
		ii. Comply with the requirements of 40 CFR part 65, subpart F, except as specified in §63.2480(c)(10) and (11), (e), and (f).

The facility complies with the leak detection and repair requirements within 40 CFR Part 63, subpart UU, §§63.1025 - 63.1027.

Table 7: Applicable to process wastewater and liquid streams as follows:

For each . . .	You must . . .
1. Process wastewater stream	Comply with the requirements in §§63.132 through 63.148 and the requirements referenced therein, except as specified in §63.2485.

The facility has three process wastewater streams in the AN process as follows and chooses to comply with the §63.2485(i) alternative:

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

The facility chooses to comply with 40 CFR Part 63, subpart G, §63.138(i)(1) for the Group 1 wastewater stream (AN-52 decant water).

§63.2455 What requirements must I meet for continuous process vents?

Not applicable

§63.2460 What requirements must I meet for batch process vents?

(a) *General.* You must meet each emission limit in Table 2 to this subpart that applies to you, and you must meet each applicable requirement specified in paragraphs (b) and (c) of this section and §§63.2492 and 63.2493(a) through (c).

There are no applicable requirements in Table 2 because there are no Group 1 batch process vents or vents that contain ethylene oxide.

The collective uncontrolled organic HAP emission rate from all batch process vents in the MCPU is 58 lbs/yr. This emission rate was calculated using the equations from §63.1257, as referenced in §63.2460. Since emissions from the collective batch process vents is less than 10,000 lbs/yr, they are Group 2 and no controls are required. Although not a requirement, the AN reactor vents to the AN flare. There is also an emergency vent to the atmosphere.

§63.2465 What requirements must I meet for process vents that emit hydrogen halide and halogen HAP or HAP metals?

Not applicable.

§63.2470 What requirements must I meet for storage tanks?

(a) *General.* You must meet each emission limit in Table 4 to this subpart that applies to your storage tanks, and except as specified in paragraph (b) of this section, you must also meet each applicable requirement specified in paragraphs (c) through (f) of this section and §§63.2492 and 63.2493(a) through (c).

There are no applicable requirements in Table 4 because there are no Group 1 storage tanks or tanks that contain ethylene oxide.

Tank Name	Capacity (gallons)	Maximum Vapor Pressure		Basis for Group 2 Determination[1]
		(psia)	(kPa)	
Product Tank 1	12,000	0.031	0.214	v.p. < 6.9 kPa
Product Tank 2	12,000	0.031	0.214	v.p. < 6.9 kPa
Product Tank 3	12,000	0.031	0.214	v.p. < 6.9 kPa
90-Day Tank	9,000	0.0005	0.003	Capacity < 10,000 gal
Ketone Tank 1	9,000	1.83	12.6	Capacity < 10,000 gal
Ketone Tank 2	9,000	1.83	12.6	Capacity < 10,000 gal
Triethylamine TEA Tank	1,500	1.83	12.6	Capacity < 10,000 gal

[1] *Group 1 storage tank* means a storage tank with a capacity greater than or equal to 10,000 gal storing material that has a maximum true vapor pressure of total HAP greater than or equal to 6.9 kilopascals at an existing source or greater than or equal to 0.69 kilopascals at a new source. *Group 2 storage tank* means a storage tank that does not meet the definition of a Group 1 storage tank. (Reference §63.2550(i))

Although not a requirement, the product tanks and waste water tanks vent to the AN flare.

§63.2475 What requirements must I meet for Transfer Racks?

Not applicable because there are no Group 1 transfer racks.

§63.2480 What requirements must I meet for equipment leaks?

The facility complies with the leak detection and repair requirements within 40 CFR Part 63, subpart UU, §§63.1025 - 63.1027, as required in Table 6 of Subpart FFFF, for the following AN Process components:

Type	Number	Light Liquid	Heavy Liquid	Vapor
Agitators	1	NA	NA	NA
Pumps	8	8	0	0
Valves	223	154	0	69
Connectors	24	21	0	3
Pressure Relief Valves	2	NA	NA	NA

§63.2485 What requirements must I meet for wastewater streams and liquid streams in open systems within an MCPU?

(a) *General.* You must meet each requirement in Table 7 to this subpart that applies to your wastewater streams and liquid streams in open systems within an MCPU, except as specified in paragraphs (b) through (q) of this section.

Table 7 is applicable as follows:

For each . . .	You must . . .
1. Process wastewater stream	Comply with the requirements in §§63.132 through 63.148 and the requirements referenced therein, except as specified in §63.2485.

The facility has three process wastewater streams in the AN process. For the purposes of this subpart, a process wastewater stream is Group 1 for compounds in tables 8 and 9 to this subpart if any of the conditions specified in paragraphs (c) (1) through (3) as follows:

Wastewater Stream ID	Group Type[1]	Contains Table 8 HAP Compounds		
		(c)(1) >10,000 ppm and > 200 lb/yr	(c)(2) >1,000 ppm and > 1 l/min	(c)(3) Combined > 30,000 ppm
Tanker truck washing	1	No	No	No
Washing out after campaign	1	No	No	No
AN-52 decant water	1	Yes	No	No

[1] Reference §63.2485(c)

The facility chooses to comply with 40 CFR Part 63, Subpart G, §63.138(h)(1, 2 or 3) (Treatment in a RCRA unit option) as referenced by 40 CFR 63, Subpart FFFF, §63.2485(i) for each of these groups. The compliance option is collection in a RCRA 90-day fixed roof storage tank and disposed of as a hazardous waste at a RCRA incinerator.

(i) *One megagram total source mass flow rate option.* A wastewater stream is exempt from the requirements of paragraphs (b) and (c) of this section if the owner or operator elects to comply with either paragraph (i)(1) or (2) of this section, and complies with paragraph (i)(3) of this section.

(1) *All Group 1 wastewater streams at the source.* The owner or operator shall demonstrate that the total source mass flow rate for Table 8 and/or Table 9 compounds is less than 1 megagram per year using the procedures in paragraphs (i)(1)(i) and (i)(1)(ii) of this section. The owner or operator shall include all Group 1 wastewater streams at the source in the total source mass flow rate. The total source mass flow rate shall be based on the mass as calculated before the wastewater stream is treated. The owner or operator who meets the requirements of this paragraph (i)(1) is exempt from the requirements of §§63.133 through 63.137.

The mass flow rate for this wastewater stream was calculated by the source to be 0.105 Mg/yr.

Additionally, the 90-Day Wastewater Tank is a fixed roof and complies with §63.133(a)(1).

§63.2490 What requirements must I meet for heat exchange systems?

(a) You must comply with each requirement in Table 10 to this subpart that applies to your heat exchange systems, except as specified in paragraphs (b - d) of this section.

Table 10 is applicable as follows:

For each . . .	You must . . .
Heat exchange system, as defined in §63.101	Comply with the requirements in §63.2490(d).

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 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).

- **Subpart ZZZZ**: National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

This subpart only has limited requirements for the two new Generac 755 HP diesel-fired emergency generators (Generators #3 and 4), permitted under Construction Permit No. 00097-21PC, and the 332 HP diesel-fired Fire Pump Engine #3 (EPN 518), as specified within §63.6590(b):

These units are subject and are required to comply with 40 CFR Part 60, Subpart IIII.

(b)(1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(f).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) and (iii).

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

269 HP Fire Pump Engine #2 (P05)(EPN 517), 282 HP Fire Pump Engine #4 (P07)(EPN 519), 174 HP Emergency Generator #1 (P08)(EPN 520) and 174 HP Generator #2 (P09)(EPN 521) are existing engines subject to 40 CFR Part 63, Subpart ZZZZ as follows:

Applicable Subparts	Description
§63.6602	Emission Standards Table 2c to Subpart ZZZZ of Part 63 (item 1.) requires: 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 replace as necessary; c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. During periods of startup the following is required: a) Minimize the engine's 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.
§63.6604	Fuel Requirements Covoro does not operate engines for more than 15 hours per calendar year for the purposes specified in §63.6640(f)(2)(ii) - Demand response) and (iii - Periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency) or operate engines for the purpose specified in §63.6640(f)(4)(ii - Supply power as part of a financial arrangement with another entity) and is therefore not obligated to use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.
§63.6605	General Compliance Requirements a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times. b) At all times you must operate and maintain any affected source, 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.
§63.6625(e)	Monitoring, Installation, Collection, Operation, and Maintenance Requirements Operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions.
§63.6640(a)	Compliance Demonstration with Emission Limitations, Operating Limitations, and Other Requirements Demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b (Neither applicable > 500 HP only), Tables 2a and 2b (Neither applicable > 500 HP only) , Table 2c (Applicable), and Table 2d (Not applicable – area sources only) to this subpart that apply to you according to methods specified in Table 6 to this subpart. Covoro will continue to comply with Item 1 of Table 2c through the methods specified in Item 9 of Table the requires operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions.
§63.6640(b)	Compliance Demonstration with Emission Limitations, Operating Limitations, and Other Requirements Report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and

	operating limitations in this subpart. These deviations must be reported according to the requirements in §63.6650.
§63.6640(f)(1)	Compliance Demonstration with Emission Limitations, Operating Limitations, and Other Requirements There is no time limit for emergency situations.
§63.6640(f)(2)	Compliance Demonstration with Emission Limitations, Operating Limitations, and Other Requirements You may operate your emergency stationary RICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2). Allowable non-emergency uses are as follows: a) Maintenance checks; b) Readiness testing; c) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. (Not performed by Covoro) d) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. (Not performed by Covoro) e) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. 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 this section. 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.
§63.6640(f)(3)	Compliance Demonstration with Emission Limitations, Operating Limitations, and Other Requirements Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. 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 this section. 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.
§63.6650(f)	Reports Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.
§63.6655(a)	Records If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of

	this section. 1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv). 2) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. 3) Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii). (Not applicable) 4) Records of all required maintenance performed on the air pollution control and monitoring equipment. (Not applicable) 5) Records 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.
§63.6655(d)	Records Keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation . Table 6 to Subpart ZZZZ of Part 63 (item 9.) requires operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions.
§63.6655(e)	Records You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE
§63.6655(f)	Records Keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document 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.
§63.6660	Records 1) Records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1). 2) As specified in §63.10(b)(1), keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. 3) Keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1).
§63.6665	Other Requirements Table 8 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply.

- **Subpart DDDDD**: National Emission Standards for Hazardous Air Pollutants for Industrial for Institutional, Commercial, and Industrial Boilers and Process Heaters

  §63.7485 Am I subject to this subpart? And

  You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler or process heater as defined in §63.7575 that is located at, or is part of, a major source of HAP, except as specified in §63.7491. For purposes of this subpart, a major source of HAP is as defined in §63.2, except that for oil and natural gas production facilities, a major source of HAP is as defined in §63.7575.

  The following sources are subject to this subpart:

Emission Unit Group	Emission Source	Emission Point	Description[1]	Capacity (MMBtu/hr)	Fuel Type	§63.7499 Fuel Subcategory
EU 4 *(Power Area)*	P01	EPN 501	Boiler #1	78.7	HCN absorber off-gas and Natural gas	Gas 1 Fuels and Other Gas 1 Fuels
	P02		Boiler #2	78.7		
	P03	EPN 502	Boiler #3	155		
	P04	EPN 503	Boiler #4	155	Natural gas	Gas 1 Fuels
EU 2 *(HCN Process)*	C01	EPN 103	Preheater A	24	HCN absorber off-gas and Natural gas	Gas 1 Fuels and Other Gas 1 Fuels
		EPN 104	Preheater B	24		
		EPN 105	Preheater C	24		
EU 3 *(Solid Cyanides Process)*	N01	EPN 402[2]	Process Air Heater	15	Natural gas	Gas 1 Fuels

[1] All units have oxygen trim systems per the January 2021 Title V operating permit application (Page 5-6).

[2] EPN 402 was constructed in 2016 and is considered a new affected source under this subpart.

Process Preheaters (EPN 103, 104 and 105) and Powerhouse Boilers (EPN 501, 502 and 503) combust natural gas and Absorber Off Gas (AOG) as fuel. These units 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.

AOG is defined as an "Other Gas 1 Fuel", which is defined as a gaseous fuel that is not natural gas or refinery gas (Gas 1 fuels) and does not exceed a maximum concentration of 40 micrograms/cubic meters of mercury.

§63.7499 What are the subcategories of boilers and process heaters?

Detailed in above table.

§63.7490 What is the affected source of this subpart?

(b) A boiler or process heater is new if you commence construction of the boiler or process heater after June 4, 2010, and you meet the applicability criteria at the time you commence construction.

EPN 402 was constructed in 2016 and is considered a new affected source under this subpart.

(d) A boiler or process heater is existing if it is not new or reconstructed.

P01 through P04 are existing boilers under this subpart. P01 and P02 were constructed in 1951, P03 was constructed in 1966, and P04 was constructed in 1976. EPN 103 – 105 were constructed prior to 1997.

§63.7500 What emission limitations, work practice standards, and operating limits must I meet?

(a)

(1) You must meet each emission limit and work practice standard in Tables 1 through 3, and 11 through 13 to this subpart that applies to your boiler or process heater, for each boiler or process heater at your source, except as provided under § 63.7522.

(3) At all times, you must operate and maintain any affected source (as defined in § 63.7490), 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.

Table 1 - Emission Limits for New or Reconstructed Boilers and Process Heaters

Table 1 is not applicable to the "new" Process Air Heater N01 (EPN 402) because the unit uses only natural gas (A Gas 1 fuel).

Table 2 - Emission Limits for Existing Boilers and Process Heaters

Table 2 is not applicable to the "existing" Boilers P01 - P04 (EPN 501, 502 and 503) and Preheaters A - C (C01) (EPN 103, 104 and 105) because these units use only natural gas and AOG (Gas 1 and Other Gas 1 fuel).

Table 3 - Work Practice Standards

Table Item No.	Affected Units	Requirement
1	A new or existing boiler or process heater with a continuous oxygen trim system that maintains an optimum air to fuel ratio in any of the following subcategories: unit designed to burn gas 1. Preheaters (EPN 103, 104 and 105), Process Air Heater (EPN 402) and Powerhouse Boilers (EPN 501, 502 and 503) are affected.	Conduct a tune-up of the boiler or process heater every 5 years as specified in § 63.7540.
4	An existing boiler or process heater located at a major source facility, not including limited use units Preheaters (EPN 103, 104 and 105) and Powerhouse Boilers (EPN 501, 502 and 503) are affected.	Must have a one-time energy assessment performed by a qualified energy assessor. The energy assessment must include the following with extent of the evaluation for items a. to e. appropriate for the on-site technical hours listed in § 63.7575: a. A visual inspection of the boiler or process heater system. b. An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints. c. An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator.

		d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage. e. A review of the facility's energy management program and provide recommendations for improvements consistent with the definition of energy management program, if identified. f. A list of cost-effective energy conservation measures that are within the facility's control. g. A list of the energy savings potential of the energy conservation measures identified. h. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

Tables 4 – 8

Not applicable

Table 9 - Reporting Requirements

Table Item No.	Affected Units	Reporting Frequency
1	The following are applicable to all units: a. Information required in § 63.7550(c)(1) through (5); and Semiannually, annually, biennially, or every 5 years according to the requirements in § 63.7550(b). b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to you and there are no deviations from the requirements for work practice standards for periods of startup and shutdown in Table 3 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period; and c. If you have a deviation from any emission limitation (emission limit and operating limit) where you are not using a CMS to comply with that emission limit or operating limit, or a deviation from a work practice standard for periods of startup and shutdown, during the reporting period, the report must contain the information in § 63.7550(d); and d. If there were periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in § 63.8(c)(7), or otherwise not operating, the report must contain the information in § 63.7550(e)	Semiannually, annually, biennially, or every 5 years according to the requirements in § 63.7550(b).

Tables 10 – 14

Not applicable

General Requirements

§63.7505 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limits, work practice standards, and operating limits in this subpart. These emissions and operating limits apply to you at all times the affected unit is operating except for the periods noted in §63.7500(f).

Testing, Fuel Analyses, and Initial Compliance Requirements

§63.7510 What are my initial compliance requirements and by what date must I conduct them?

Not applicable

§63.7515 When must I conduct subsequent performance tests, fuel analyses, or tune-ups?

(d) If you are required to meet an applicable tune-up work practice standard, you must conduct an annual, biennial, or 5-year performance tune-up according to §63.7540(a)(10), (11), or (12), respectively. Each annual tune-up specified in §63.7540(a)(10) must be no more than 13 months after the previous tune-up. Each biennial tune-up specified in §63.7540(a)(11) must be conducted no more than 25 months after the previous tune-up. Each 5-year tune-up specified in §63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed affected source (as defined in §63.7490), the first annual, biennial, or 5-year tune-up must be no later than 13 months, 25 months, or 61 months, respectively, after April 1, 2013 or the initial startup of the new or reconstructed affected source, whichever is later.

§63.7520 What stack tests and procedures must I use?

Not applicable.

§63.7521 What fuel analyses, fuel specification, and procedures must I use?

Not applicable.

§63.7522 Can I use emissions averaging to comply with this subpart?

Not applicable.

§63.7525 What are my monitoring, installation, operation, and maintenance requirements?

Not applicable.

§63.7530 How do I demonstrate initial compliance with the emission limitations, fuel specifications and work practice standards?

(e) You must include with the Notification of Compliance Status a signed certification that either the energy assessment was completed according to Table 3 to this subpart, and that the assessment is an accurate depiction of your facility at the time of the

assessment, or that the maximum number of on-site technical hours specified in the definition of energy assessment applicable to the facility has been expended.

Covoro has submitted the Notification of Compliance Status for P01 – P04, EPN 103 – 105, and EPN 402.

(f) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.7545(e).

Covoro has submitted the Notification of Compliance Status for P01 – P04, EPN 103 – 105, and EPN 402.

§63.7533 Can I use efficiency credits earned from implementation of energy conservation measures to comply with this subpart?

Not applicable.

Continuous Compliance Requirements

§63.7535 Is there a minimum amount of monitoring data I must obtain?

Not applicable.

§63.7540 How do I demonstrate continuous compliance with the emission limitations, fuel specifications and work practice standards?

(a) You must demonstrate continuous compliance with each emission limit in Tables 1 and 2 or 11 through 13 to this subpart, the work practice standards in Table 3 to this subpart, and the operating limits in Table 4 to this subpart that applies to you according to the methods specified in Table 8 to this subpart and paragraphs (a)(1) through (19) of this section.

(10) If your boiler or process heater has a heat input capacity of 10 million Btu per hour or greater, you must conduct an annual tune-up of the boiler or process heater to demonstrate continuous compliance as specified in paragraphs (a)(10)(i) through (vi) of this section. You must conduct the tune-up while burning the type of fuel (or fuels in case of units that routinely burn a mixture) that provided the majority of the heat input to the boiler or process heater over the 12 months prior to the tune-up. This frequency does not apply to limited-use boilers and process heaters, as defined in §63.7575, or units with continuous oxygen trim systems that maintain an optimum air to fuel ratio.

(b) You must report each instance in which you did not meet each emission limit and operating limit in Tables 1 through 4 or 11 through 13 to this subpart that apply to you. These instances are deviations from the emission limits or operating limits, respectively, in this subpart. These deviations must be reported according to the requirements in §63.7550.

§63.7541 How do I demonstrate continuous compliance under the emissions averaging provision?

Not applicable.

Notification, Reports, and Records

§63.7545 What notifications must I submit and when?

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

(b) As specified in §63.9(b)(2), if you startup your affected source before January 31, 2013, you must submit an Initial Notification not later than 120 days after January 31, 2013.

Covoro submitted Initial Notifications for P01 – P03 and EPN 103 – 105 not later than 120 days after January 31, 2013.

(c) As specified in §63.9(b)(4) and (5), if you startup your new or reconstructed affected source on or after January 31, 2013, you must submit an Initial Notification not later than 15 days after the actual date of startup of the affected source.

Covoro submitted an Initial Notification for EPN 402 not later than 15 days after the actual date of startup.

(e) If you are required to conduct an initial compliance demonstration as specified in §63.7530, you must submit a Notification of Compliance Status according to §63.9(h)(2)(ii). For the initial compliance demonstration for each boiler or process heater, you must submit the Notification of Compliance Status, including all performance test results and fuel analyses, before the close of business on the 60th day following the completion of all performance test and/or other initial compliance demonstrations for all boiler or process heaters at the facility according to §63.10(d)(2). The Notification of Compliance Status report must contain all the information specified in paragraphs (e)(1) through (8) of this section, as applicable. If you are not required to conduct an initial compliance demonstration as specified in §63.7530(a), the Notification of Compliance Status must only contain the information specified in paragraphs (e)(1) and (8) of this section and must be submitted within 60 days of the compliance date specified at §63.7495(b).

(1) A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with this subpart, description of the fuel(s) burned, including whether the fuel(s) were a secondary material determined by you or the EPA through a petition process to be a non-waste under §241.3 of this chapter, whether the fuel(s) were a secondary material processed from discarded non-hazardous secondary materials within the meaning of §241.3

of this chapter, and justification for the selection of fuel(s) burned during the compliance demonstration.

(6) A signed certification that you have met all applicable emission limits and work practice standards.

(7) If you had a deviation from any emission limit, work practice standard, or operating limit, you must also submit a description of the deviation, the duration of the deviation, and the corrective action taken in the Notification of Compliance Status report.

(8) In addition to the information required in §63.9(h)(2), your notification of compliance status must include the following certification(s) of compliance, as applicable, and signed by a responsible official:

(i) "This facility completed the required initial tune-up for all of the boilers and process heaters covered by 40 CFR part 63 subpart DDDDD at this site according to the procedures in §63.7540(a)(10)(i) through (vi)."

(ii) "This facility has had an energy assessment performed according to §63.7530(e)."

(iii) Except for units that burn only natural gas, refinery gas, or other gas 1 fuel, or units that qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act, include the following: "No secondary materials that are solid waste were combusted in any affected unit."
Covoro has submitted Notification of Compliance Status for P01 – P04, EPN 103 – 105, and EPN 402 according to the applicable requirements of paragraph (e) of this section.

(f) If you operate a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to this subpart, 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 information specified in paragraphs (f)(1) through (5) of this section.

(1) Company name and address.

(2) Identification of the affected unit.

(3) 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.

(4) Type of alternative fuel that you intend to use.

(5) Dates when the alternative fuel use is expected to begin and end.

§63.7550 What reports must I submit and when?

(a) You must submit each report in Table 9 to this subpart that applies to you.

(b) Unless the EPA Administrator has approved a different schedule for submission of reports under §63.10(a), you must submit each report, according to paragraph (h) of this section, by the date in Table 9 to this subpart and according to the requirements in paragraphs (b)(1) through (4) of this section. For units that are subject only to a requirement to conduct subsequent annual, biennial, or 5-year tune-up according to §63.7540(a)(10), (11), or (12), respectively, and not subject to emission limits or Table 4 operating limits, you may submit only an annual, biennial, or 5-year compliance report, as applicable, as specified in paragraphs (b)(1) through (4) of this section, instead of a semi-annual compliance report.

(1) The first semi-annual compliance report must cover the period beginning on the compliance date that is specified for each boiler or process heater in §63.7495 and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date that is specified for your source in §63.7495. If submitting an annual, biennial, or 5-year compliance report, the first compliance report must cover the period beginning on the compliance date that is specified for each boiler or process heater in §63.7495 and ending on December 31 within 1, 2, or 5 years, as applicable, after the compliance date that is specified for your source in §63.7495.

(2) The first semi-annual compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for each boiler or process heater in §63.7495. The first annual, biennial, or 5-year compliance report must be postmarked or submitted no later than January 31.

(3) Each subsequent semi-annual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual, biennial, and 5-year compliance reports must cover the applicable 1-, 2-, or 5-year periods from January 1 to December 31.

(4) Each subsequent semi-annual compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Annual, biennial, and 5-

year compliance reports must be postmarked or submitted no later than January 31.

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

(c) A compliance report must contain the following information depending on how the facility chooses to comply with the limits set in this rule.

(1) If the facility is subject to the requirements of a tune up you must submit a compliance report with the information in paragraphs (c)(5)(i) through (iii) of this section, (xiv) and (xvii) of this section, and paragraph (c)(5)(iv) of this section for limited-use boiler or process heater.

(5) (i) Company and Facility name and address.

(ii) Process unit information, emissions limitations, and operating parameter limitations.

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

(xiv) 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.

(xvii) 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.

(d) For each deviation from an emission limit or operating limit in this subpart that occurs at an individual boiler or process heater where you are not using a CMS to comply with that emission limit or operating limit, or from the work practice standards for periods if startup and shutdown, the compliance report must additionally contain the information required in paragraphs (d)(1) through (3) of this section.

(1) A description of the deviation and which emission limit, operating limit, or work practice standard from which you deviated.

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

(h) You must submit the reports according to the procedures specified in paragraphs (h)(1) through (3) of this section.

(3) You must submit all reports required by Table 9 of this subpart electronically to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) You must use the appropriate electronic report in CEDRI for this subpart. Instead of using the electronic report in CEDRI for this subpart, you may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site *(http://www.epa.gov/ttn/chief/cedri/ index.html*), once the XML schema is available. If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, you must submit the report to the Administrator at the appropriate address listed in §63.13. You must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI.

§63.7555 What records must I keep?

(a) You must keep records according to paragraphs (a)(1) and (2) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted, according to the requirements in §63.10(b)(2)(xiv).

(h) If you operate a unit in the unit designed to burn gas 1 subcategory that is subject to this subpart, and you use an alternative fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart under this part, other gas 1 fuel, or gaseous fuel subject to another subpart of this part or part 60, 61, or 65, you must keep records of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the unit operated during periods of gas curtailment or gas supply emergencies.

§63.7560 In what form and how long must I keep my records?

(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.

(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.

6.5. Greenhouse Gases (GHGs)

- 40 CFR Parts 52 and 70 (PSD Applicability and Title V Permitting)

  The GHG Tailoring Rule sets the threshold for both Title V permitting and PSD applicability at 100,000 tons per year.

  Potential CO2e emissions from this facility exceed this threshold.

- U.S. Supreme Court Decision in Utility Air Regulatory Group v. EPA

  On June 23, 2014, the U.S. Supreme Court issued its decision in Utility Air Regulatory Group v. EPA (No. 12-1146). The Court said that EPA may not treat greenhouse gases as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD or title V permit. The Court also said that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on greenhouse gases emissions based on the application of Best Available Control Technology.

- 40 CFR Part 98 (Mandatory Greenhouse Gas Reporting)

  The facility is subject to this rule because potential CO_2e emissions exceed the 25,000 metric tonnes per year applicability threshold.

  Although subject, this is not an "applicable requirement" and will not be incorporated into the permit. The facility is required to submit these reports directly to the EPA.

6.6. Local VOC Regulations

- **1200-3-18-.38**: Leaks from Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment

  This rule applies to all equipment in volatile organic compound (VOC) service in any process unit at a synthetic organic chemical, polymer, and resin manufacturing facility in Davidson, Rutherford, Shelby, Sumner, Williamson, or Wilson County

  The HCN Process is subject to this regulation. The facility complies with 40 CFR Part 63, subpart TT, Leak Detection and Repair (LDAR) requirements in the HCN Process.

- **1200-3-18-.40**: Air Oxidation Processes in the Synthetic Organic Chemical Manufacturing Industry

This rule applies to the following air oxidation facilities in Davidson, Rutherford, Shelby, Sumner, Williamson, or Wilson Counties in the synthetic organic chemical manufacturing industry:

(1) Each air oxidation reactor not discharging its vent stream into a recovery system;

(2) Each combination of an air oxidation reactor and the recovery system into which its vent stream is discharged; and

(3) Each combination of two or more air oxidation reactors and the common recovery system into which their vent streams are discharged.

Any air oxidation reactor vent stream that has a total resource effectiveness (TRE) index value greater than 1.0 is exempt from all provisions of this rule except the requirements in Paragraph (3) and Subparagraphs (5)(b) and (6)(j) of this rule.

The HCN Process is subject to this regulation. HCN process Start-Up, Run and Tank Farm flares comply with 40 CFR Part 63, subpart YY (National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic MACT Standards).

The Start-up Flare meets the monitoring requirements of 40 CFR Part 63, subpart YY, which were assumed sufficient to meet the monitoring requirements of City of Memphis Code Section 16-80 [Reference Rules and Regulations of Tennessee, Rule 1200-3-18-.40] in the previous version of this permit. After performing a detailed regulatory analysis during the renewal process, it was determined that 1200-3-18-.40(4)(b) also required a flow indicator that provides a record of vent stream flow to the flare at least once every hour.

The Department has allowed the facility to install and operate a compliant flow meter within one year of permit issuance or the next major facility shutdown, whichever comes first.

Process Heaters (Stacks ID 103, 104 and 105) and Powerhouse Boilers (Stacks ID 501, 502 and 503) that use Absorber Off Gas (AOG) as fuel are exempt from 40 CFR Part 63, subpart YY, but must comply with this subpart.

VII. POTENTIAL to EMIT EVALUATION

The potential to emit for this source exceeds 250 tons per year (tpy) for both Carbon Monoxide (CO) and Nitrogen Oxides (NO_x); therefore, this facility is a PSD source.

The facility is also a major source for hazardous air pollutants (HAPs) due to emissions of Acetonitrile (CAS No. 75058) and Hydrogen Cyanide (CAS No. 74-90-8) both exceeding 10 tpy.

VIII. FEE SUMMARY

The following fees are applicable to these permit actions:

No.	Action	Description	Fee
1	Modification	Amendments (Permit hygiene)	$130.00
		TOTAL:	$130.00

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APPENDIX A

Regulatory Applicability Overview Table

Covoro Mining Solutions, LLC
Federal Requirement Applicability
July 3, 2024

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	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
	which Construction, Reconstruction, or Modification commenced after January 5, 1981, but before November 7, 2006.		
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 EUs 1, 2, 3, and 4
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(h)(1,2 or 3) of subpart G for the AN Process (EU 1) Group 1 wastewater streams. 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
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.

CFR Part	Description	Applicable Req.	Notes
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
July 3, 2024

TDEC/Shelby/Memphis	Description	Applicable Req.	Notes
CHAPTER 1200-3-2(3-1A)(16-46)	**DEFINITIONS**		
1200-3-2-.01	General Definitions	Not Applicable (NA)	Defines terms used in chapter
1200-3-2-.02	Abbreviations	NA	Defines abbreviations used in chapter
CHAPTER 1200-3-3(3-6)(16-49)	**AMBIENT AIR QUALITY STANDARDS**		
1200-3-3-.01	Primary Air Quality Standard	Yes	Contains general requirements
1200-3-3-.02	Secondary Air Quality Standard	Yes	Contains general requirements
1200-3-3-.03	Tennessee's Ambient Air Quality Standard	Yes	Contains general requirements
1200-3-3-.04	Nondegradation Standard	Yes	Contains general requirements
1200-3-3-.05	Achievement	Yes	Contains general requirements
CHAPTER 1200-3-5(3-17)(16-83)	**VISIBLE EMISSIONS**		
1200-3-5-.01	General Standards	Yes	Contains specific requirements applicable to facility-wide.
1200-3-5-.02	Exceptions	Yes	Contains general requirements
1200-3-5-.03	Method of Recording	Yes	Contains specific requirements applicable to facility-wide.
1200-3-5-.04	Exemption	Yes	Contains specific requirements applicable to facility-wide.
CHAPTER 1200-3-6(3-21)(16-79)	**NON-PROCESS EMISSION STANDARDS (PM)**		
1200-3-6-.01	General Non-Process Emissions	Yes	Contains general requirements
1200-3-6-.02	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)**		
1200-3-7-.01	General Process Particulate Emission Standards	Yes	Contains general requirements
1200-3-7-.02	Choice of Particulate Emission Standards	Yes	Contains specific requirements for EU3
1200-3-7-.03	New Processes	Yes	Contains specific requirements for EU3
1200-3-7-.04	Limiting Allowable Emissions	Yes	Contains specific requirements for EU3
1200-3-9-.01	Construction Permits	Yes	Contains general requirements
1200-3-9-.02	Operating Permits	Yes	Contains general requirements

TDEC/Shelby/Memphis	Description	Applicable Req.	Notes
1200-3-9-.03	General Provisions	Yes	Contains general requirements
1200-3-9-.04	Exemptions	Yes	Contains general requirements
1200-3-9-.05	Appeal of Permit Application Denials and Permit Conditions	Yes	Contains general requirements
CHAPTER 1200-3-10(3-7)(16-85)	**REQUIRED SAMPLING, RECORDING, AND REPORTING**		
1200-3-10-.01	Sampling Required to Establish Air Contaminant Emissions Levels	Yes	Contains general requirements
1200-3-10-.02	Monitoring of Source Emissions, Recording and Reporting of Same are Required	Yes	Contains general requirements
1200-3-10-.04	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
1200-3-12-.02	Procedures for Ambient Air Sampling and Analysis	Yes	Contains general requirements
1200-3-12-.03	Source Sampling and Analysis	Yes	Contains general requirements
CHAPTER 1200-3-14(3-24)(16-82)	**SULFUR OXIDE EMISSIONS**		
1200-3-14-.01	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**		
1200-3-16-.59	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**		
1200-3-18-.01	Definitions	NA	Defines terms used in chapter
1200-3-18-.02	General Provisions and Applicability	Yes	Contains general requirements
1200-3-18-.04	Compliance Certification, Record Keeping, and Reporting Requirements for Non-Coating and Non-Printing Sources	Yes	Contains specific requirements

TDEC/Shelby/Memphis	Description	Applicable Req.	Notes
1200-3-18-.06	Handling, Storage, and Disposal of Volatile Organic Compounds (VOCs)	Yes	Contains general requirements
1200-3-18-.38	Leaks from Synthetic Organic Chemical, Polymer, and Resin Manufacturing Equipment	Yes	HCN Process applicability only, MACT requirements take precedence
1200-3-18-.40	Air Oxidation Processes in the Synthetic Organic Chemical Manufacturing Industry	Yes	HCN Process applicability only, MACT requirements take precedence
1200-3-18-.80	Test Methods and Compliance Procedures: General Provisions	Yes	Contains general requirements
1200-3-18-.83	Test Methods and Compliance Procedures: Emission Capture and Destruction of Removal Efficiency and Monitoring Requirements	Yes	Contains specific requirements for affected facility
1200-3-18-.84	Test Methods and Compliance Procedures: Determining the Destruction or Removal Efficiency of a Control Device	Yes	Contains specific requirements for affected facility
1200-3-18-.85	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**		
1200-3-20-.01	Purpose	Yes	Contains general requirements
1200-3-20-.02	Reasonable Measures Required	Yes	Contains general requirements
1200-3-20-.03	Notice Required When Malfunction Occurs	Yes	Contains general requirements
1200-3-20-.04	Logs and Reports	Yes	Contains general requirements
1200-3-20-.05	Copies of Logs Required	Yes	Contains general requirements
1200-3-20-.06	Report Required Upon the Issuance of a Notice of Violation	Yes	Contains general requirements
1200-3-20-.07	Special Reports Required	Yes	Contains general requirements
1200-3-20-.08	Rights Reserved	Yes	Contains general requirements
1200-3-20-.09	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**		
1200-3-24-.01	General Provisions	Yes	Contains general requirements

TDEC/Shelby/Memphis	Description	Applicable Req.	Notes
1200-3-24-.02	Definitions	Yes	Contains general requirements
1200-3-24-.03	Good Engineering Practice Stack Height Standards	Yes	Contains general requirements
1200-3-24-.04	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)			
(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

Emission Summary Tables

POST PERMIT AND EMISSION SUMMARY

DATE	SOURCE #	FACILITY NAME	FACILITY CLASSIFICATION					LAST INSPECTION	RECORD NO.
			MAJOR	MINOR	SYNTHETIC MINOR	-	-		
12/23/24	00097	Covoro Mining Solutions, LLC	X					11/08/24	5866

ALLOWABLE PERMITTED POLLUTANT (tons per 12-month rolling period)

PERMIT NO.	ISSUED	REVISED	EXPIRED	NO_x	CO	VOC	PM	PM_{10}	SO_2	PB	PERC	HAP	CO2e	Check if Applicable: MACT (40 CFR 63)	NESHAP (40 CFR 61)	NSPS (40 CFR 60)	PSD OR NSR
00097-01TV	11/22/2022	NA	11/22/2027	1,085.56	332.38	74.36	41.28	41.28	6.14	NA	NA	>25.0		X	NA		X
00097-20PC	10/16/2017	Extended through 12/31/25		1.00	4.00	3.50	0.10	0.10	0.30	NA	NA	NA					
																X	
													>100,000 metric tonnes				
TOTAL TONS:				1086.6	336.4	77.9	41.4	41.4	6.4	NA	NA	>25.0	>100,000 metric tonnes				
Classification for each pollutant should be added here based on number of tons: A = Major SM = Synthetic Minor B = Minor				B	A	A	NA	B	B	NA	NA	NA	A				
CHECK IF NONATTAINMENT STATUS APPLIES:													Subparts:	YY, EEEE, FFFF, ZZZZ, DDDDD		IIII	PSD
RACT/BACT/LAER REQUIRED?				No	No	If YES please provide brief description for database (see application evaluation document)							Pollutant:	HAP		SO_2, CO, NOx, VOC, and PM	CO and NO_x

APPENDIX C

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:

TABLE C-1
1200-03-09-.04(5)(a)(4)(i) Insignificant Activities

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 Arkema Equipment in Power Area under separate Title V with Shelby County APC	No VOC or HAP emitted
Nitrogen Tank	No VOC or HAP emitted

Categorically Exempt Activities

Activities which are categorically exempted 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:

TABLE C-2
1200-03-09-.04(5)(a)(4)(ii-iii) - Size or Production Rate Insignificant Activities

Source Description	Regulatory Basis
Boiler Water Treatment Tank - 1,550 gal	1200-03-09-.04(5)(g)(45) : Boiler water treatment operations, not including cooling towers.
Boiler Water Treatment Tank - 1,550 gal	1200-03-09-.04(5)(g)(45) : Boiler water treatment operations, not including cooling towers.
CT Treatment Tank - 1,550 gal	1200-03-09-.04(5)(g)(45) : Boiler water treatment operations, not including cooling towers.
Caustic Tank – Not in service - 500 gal	1200-03-09-.04(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)	1200-03-09-.04(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	1200-03-09-.04(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks
Site Portable Gasoline Tanks - < 200 gal	1200-03-09-.04(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks
Site Diesel Tank (Fuelg Station) - 5,200 gal	1200-03-09-.04(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks,
Site Gas Tank (Fueling station) - 5,200 gal	1200-03-09-.04(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks
MMA Fire Pumps Diesel Tanks - Two 500 gal	1200-03-09-.04(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks
ACRN Fire Pump Diesel Tank - 500 gal	1200-03-09-.04(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks
Construction Portable Fuel Oil Tank - 500 gal	1200-03-09-.04(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks
Solid Cyanides Portable Gasoline Tank - 300 gal	1200-03-09-.04(5)(f)17: Gasoline, diesel fuel, and fuel oil handling facilities, equipment, and storage tanks

TABLE C-3
1200-03-09-.04(5)(a)(4)(ii-iii) - Other Size or Production Rate Insignificant Activities
(Summary of Storage Tanks – Power & Other Areas)

Tank Identification	Materials Stored	Tank Capacity (Gallons)	Type of Tank
204B	Fuel Oil – removed from service(1)	200,000	Fixed Roof
203	Fuel Oil – removed from service(1)	25,000	Fixed Roof
FAA 471-668-14	Sulfuric Acid - removed from service(1)	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(1)	500	Fixed Roof
MP 15195	Caustic – removed from service(1)	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

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 C-4
Other Size or Production Rate Insignificant Activities

Source Description	Regulatory Basis
Multiple maintenance and repair degreasing stations routinely serviced under contract	1200-3-9-.04(5)(d)(15)
Power Area IC Engine Electrical Generator (non-stationary)	1200-3-9-.04(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)	1200-3-9-.04(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.	1200-3-9-.04(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	1200-3-9-.04(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	1200-3-9-.04(5)(d)18; (f)45, 54; (g)16
Small metal parts heat treating	1200-3-9-.04(5)(d)20; (f)27

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.