



Louisville Metro Air Pollution Control District
 701 West Ormsby Ave., Suite 303
 Louisville, Kentucky 40203-3137



Permit No.: C-0036-1000-15-V(R2)

Plant ID: 36

Effective Date: XX/XX/2016

Expiration Date: XX/XX/2017

Owner: Clariant Corporation
 Source: Clariant Corporation (West Plant)
 1227 South 12th Street
 Louisville, KY 40201

is authorized to construct the described process equipment by the Louisville Metro Air Pollution Control District. Authorization is based on information provided with the application submitted by the company and in accordance with applicable regulations and the conditions specified herein.

Process equipment description:

A catalyst plant consisting of tank farm loading/unloading, support synthesis, catalyst production, solvent regeneration, co-product isolation, waste gas treatment, waste water treatment; and utilities. See Table for Equipment List.

Applicable Regulation(s): 2.03, 2.16, 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 7.02, 7.08, 7.12, 7.25, 40 CFR 60 Subpart Kb, 40 CFR 60 Subpart IIII, & 40 CFR 63 Subpart ZZZZ

Control reference(s): N/A

Application No. 63548, 71979 &
 76187/76188

Application Received: 4/1/2014, 6/8/2015 &
 4/1/2016

Permit Writer: Virginia Rhodes
 Date of Public Comment 05/06/2016

Air Pollution Control Officer
 October 06, 2015

This permit covers only the provisions of Kentucky Revised Statutes Chapter 77 Air Pollution Control, the regulations of the Louisville Metro Air Pollution Control District (District) and, where appropriate, certain federal regulations. The issuance of this permit does not exempt any owner or operator to whom it has been issued from prosecution on account of the emission or issuance of any air contaminant caused or permitted by such owner or operator in violation of any of the provisions of KRS 77 or District regulations. The permit contains general permit conditions and specific permit conditions. General conditions are applicable unless a more stringent requirement is specified elsewhere in the permit.

General Conditions

- G1. The owner or operator of the affected facility covered by this permit shall notify the District of any process change, equipment change, material change, or change in method or hours of operation. This requirement is applicable to those changes (except equipment changes) that may have the potential for increasing the emission of air contaminants to a level in excess of the applicable limits or standards specified in this permit or District regulations.
- G2. The owner or operator shall obtain new or revised permits from the District when:
(See District Regulation 2.16 for Title V sources. See District Regulation 2.17 for FEDOOP sources. See District Regulation 2.03 for other sources.)
- a. The company relocates to a different physical address.
 - b. The ownership of the company is changed.
 - c. The name of the company as shown on the permit is changed.
 - d. Permits are nearing expiration or have expired.
- G3. The owner or operator shall submit a timely application for changes according to G2. For minor sources only, the District does not require application for permit renewal. The District automatically commences the process of permit renewal for minor sources upon expiration. Timely renewal is not always achievable; therefore, the company is hereby authorized to continue operation in compliance with the latest District permit(s) until the District issues the renewed permit(s).
- G4. The owner or operator shall not be authorized to transfer ownership or responsibility of the permit. The District may transfer permits after appropriate notification (Form 100A) has been received and review has been made.
- G5. The owner or operator shall pay the required permit fees within 45 days after issuance of the SOF by the District, unless other arrangements have been proposed and accepted by the District.

- G6. This permit allows operation 8,760 hours per year unless specifically limited elsewhere in this permit.
- G7. The owner or operator shall submit emission inventory reports as required by Regulation 1.06.
- G8. The owner or operator shall timely report abnormal conditions or operational changes, which may cause excess emissions as required by Regulation 1.07.
- G9. Unless specified elsewhere in this permit, the owner or operator shall complete required monthly record keeping within 30 days following the end of each calendar month.
- G10. If a change in the Responsible Official (RO) occurs during the term of this permit, the owner or operator shall provide written notification (Form 100A) to the District within 30 calendar days of the date the RO change occurs.

Emission Point ID	Description	Applicable Regulation(s)	Control Device	Stack ID
W62 - Tank Farm				
V100.70	Mobile Temporary Container, ¹ 5,283 gallons	7.12	NA	ST100.190
C100.1	Dryer, 110 gph	7.25	PU628	ST628.190
V100.30	Dryer Vessel, 110 gph	7.25	PU628	ST628.190
V100.31	Dryer Vessel, 110 gph	7.25	PU628	ST628.190
V101.1	Storage Tank ² (Submerged Fill) 7,836 gallons	7.12	E626.40 & PU628	ST628.190
V110.70	Mobile Temporary Container ¹ 5,283 gallons	STAR ³ & 7.12	NA	ST110.190
C110.1	Dryer, 112 gph	STAR & 7.25	PU628	ST628.190
V110.30	Dryer Vessel, 112 gph	STAR & 7.25	PU628	ST628.190
V110.31	Dryer Vessel, 112 gph	STAR & 7.25	PU628	ST628.190
V131.1	Processing Tank, 758 gallons	7.25	NA	ST131.190
V132.1	Storage Tank, ² 4,043 gallons	7.12	NA	ST132.190
V136.1	Processing Tank, 758 gallons	7.25	PU628	ST628.190
V137.1	Storage Tank ² 1,475 gallons	7.12		
V140.70	Mobile Temporary Container ¹ 5,283 gallons	STAR & 7.12	NA	ST140.190
C140.1	Dryer, 110 gph	STAR & 7.25	PU628	ST628.190
V140.30	Dryer Vessel, 110 gph	STAR & 7.25	PU628	ST628.190
V140.31	Dryer Vessel, 110 gph	STAR & 7.25	PU628	ST628.190
V150.1	Storage Tank 1, 15,648 gallons	STAR	E624.40, C627.3, C627.4, C627.5, & PU628	ST628.190
V151.1	Storage Tank II, 15,648 gallons	STAR		
V160.1	Vessel, 7,785 gallons	STAR & 7.25		
V161.1	Storage Tank, 7,785 gallons	STAR & 7.12		
W63 – Support Synthesis				
PU203	Bag Emptying Unit	7.08	NA	ST203.190
R200.1	Reactor 1	7.08, 7.25	E626.40 PU628	ST628.190
R201.1	Reactor 2	7.08, 7.25		
R220.1	Reactor	STAR & 7.25		
P230.80	Decanter	STAR & 7.25		
V231.1	Re-suspension Storage Tank 1 ⁴ 2,358 gallons	STAR & 7.25		
V232.1	Re-suspension Storage Tank 2 ⁴ 2,358 gallons	STAR & 7.25		
V234.1	SRS Transfer Tank, 1,340 gallons	STAR & 7.25	E626.40 & PU628	ST628.190
D240.1/E240.40	Dryer with Heat Exchanger	STAR, 7.25, & 7.08	F240.50, E626.40, & PU628	ST628.190

¹ Mobile Temporary containers (V100.70, V110.70, and V140.70) will be filled offsite and will only be used onsite to transfer material out of the containers; therefore, submerged fill is not applicable.

² Submerged fill is not required since the stored vapor pressure is less than 1.5 psia.

³ STAR Regulations are 5.00, 5.01, 5.20, 5.21, 5.22, & 5.23.

⁴ Re-suspension Tanks are identified as process tanks instead of storage tanks since these tanks are washing/slurry tanks with agitation that are filled and emptied each batch; therefore, these tanks are subject to Regulation 7.25 instead of Regulation 7.12.

Emission Point ID	Description	Applicable Regulation(s)	Control Device	Stack ID
V240.30	Transfer Vessel, 238 gallons	STAR & 7.25	E626.40 & PU628	ST628.190
V244.1	Blender	STAR, 7.25, & 7.08	F244.50, E626.40, & PU628	ST628.190
F244.51	Vibrating Sieve	STAR, 7.25, & 7.08	V244.30 & PU628	ST628.190
244.90	Container/Drum Filling Unit			
244.91	Container/Drum Filling Unit			
PU244	Drum Emptying Unit		V244.31, PU628	ST628.190
W64 – Catalyst Production				
PU300.80	Container Emptying Unit – Line 1	STAR, 7.25, & 7.08	E624.40, C627.3, C627.4, C627.5, & PU628	ST628.190
PU305.80	Container Emptying Unit – Line 2			
R300.1	Reactor – Line 1			
R305.1	Reactor – Line 2			
R310.1	Reactor I – Line 1	STAR & 7.25	E610.40, C627.3, C627.4, C627.5, & PU628	ST628.190
R315.1	Reactor I – Line 2			
F320.1	Filter – Line 1		E624.40, C627.3, C627.4, C627.5, & PU628	ST628.190
F325.1	Filter – Line 2			
R311.1	Reactor II – Line 1		E610.40, C627.3, C627.4, C627.5, & PU628	ST628.190
R316.1	Reactor II – Line 2			
V321.1	Recycled Storage Tank with agitation – Line 1; 2,355 gallons		E624.40, C627.3, C627.4, C627.5, & PU628	ST628.190
V326.1	Recycled Storage Tank with agitation – Line 2; 2,355 gallons			
V322.1	Recycled Storage Tank – Line 1; 3,207 gallons			
V323.1	SRC Transfer Tank – Line 1; 1,334 gal			
V327.1	Recycled Storage Tank – Line 2; 3,207 gallons			
V328.1	SRC Transfer Tank – Line 2; 1,334 gal			
D330.1/E330.40	Dryer with Heat Exchanger – Line 1	STAR, 7.25, & 7.08		
V330.30	Transfer Vessel 239 gallons	STAR & 7.25	E624.40, C627.3, C627.4, C627.5, & PU628	ST628.190
D335.1/E335.40	Dryer with Heat Exchanger – Line 2	STAR, 7.25, & 7.08	F335.50, E624.40, C627.3, C627.4, C627.5, & PU628	ST628.190
V335.30	Transfer Vessel 239 gallons	STAR & 7.25	E624.40, C627.3, C627.4, C627.5, & PU628	ST628.190
V332.1	Blender – Line 1	STAR, 7.25, & 7.08	F332.50, E624.40, C627.3, C627.4, C627.5, & PU628	ST628.190
V337.1	Blender – Line 2	STAR, 7.25, & 7.08	F337.50, E624.40, C627.3, C627.4, C627.5, & PU628	ST628.190
F332.51	Vibrating Sieve – Line 1		V332.30 & PU628	ST628.190

Emission Point ID	Description	Applicable Regulation(s)	Control Device	Stack ID
F337.51	Vibrating Sieve – Line 2	STAR, 7.25, & 7.08	V337.30 & PU628	ST628.190
PU332.81	Drum Filling Unit – Line 1			
PU337.81	Drum Filling Unit – Line 2			
332.90	Off Spec Drum Filling Unit – Line 1			
337.90	Off Spec Drum Filling Unit – Line 2			
PU332.82	Drum Emptying Unit – Line 1		V332.31 & PU628	ST628.190
PU337.82	Drum Emptying Unit – Line 2			
W65- Solvent Regeneration				
V400.1	SRS Storage Tank (Submerged Fill) 20,296 gallons	STAR, 7.12, & 40 CFR 60 Subpart Kb	E626.40 & PU628	ST628.190
E403.41/ C403.10/ E403.40/ E403.42	Reboiler with Column, Overhead Interchange and Condenser	STAR & 7.25		
V403.30	Reflux Vessel			
E403.43/ C403.20/ E403.44	Reboiler with Column and Condenser	STAR		
V403.31	Reflux Vessel			
V404.1	Storage Tank (Submerged Fill) 20,296 gallons	STAR, 7.12, & 40 CFR 60 Subpart Kb		
C406.1/C406.2	Dryer	STAR & 7.25	PU628	ST628.190
V406.30	Dryer Vessel			
V407.1	Storage Tank, 2,629 gallons ⁵	STAR & 7.12	NA	ST407.190
V410.1	SRC Storage Tank I (Submerged Fill) 20,248 gallons	STAR, 7.12, & 40 CFR 60 Subpart Kb	E624.40, C627.3, C627.4, C627.5, & PU628	ST628.190
V420.1	SRC Storage Tank II (Submerged Fill) 20,248 gallons			
C413.10/ E413.40/ E413.41	1 st Stage Distillation Column and Falling Film Evaporator with Condenser	STAR & 7.25		
V413.30	Reflux Drum, 383 gallons	STAR, 7.25		
C414.10/ E414.40/ E414.41	2 nd Stage Distillation Column and Falling Film Evaporator with Condenser			
V414.30	Reflux Drum, 180 gallons	STAR, 7.25		
C415.10/ E415.40/ E415.41	3 rd Stage Distillation Column and Falling Film Evaporator with Condenser	STAR, 7.25		
V415.30	Reflux Drum, 90 gallons	STAR, 7.25		
V447.1	Storage Tank (Submerged Fill) 20,278 gallons	STAR, 7.12, 40 CFR 60 Subpart Kb		
V448.1	Storage Tank (Submerged Fill) 20,278 gallons			
V427.1	Storage Tank (Submerged Fill) 7,862 gal	STAR, 7.12		
V428.1	Storage Tank (Submerged Fill) 7,862 gal	STAR, 7.12		
V437.1	Recycle Storage Tank/Mixing Vessel 1,982 gallons	STAR, 7.25		

⁵ Submerged fill is not required since the stored vapor pressure is less than 1.5 psia.

Emission Point ID	Description	Applicable Regulation(s)	Control Device	Stack ID
V417.1	Storage Tank, ⁶ 5,285 gallons	STAR, 7.12	E624.40, C627.3,	ST628.190
V417.2	Storage Tank, ⁶ 5,285 gallons	STAR, 7.12	C627.4, C627.5, & PU628	
W66 – Co-Product Isolation				
V600.1	SRC Storage (Surge/Transfer Vessel with Agitation) and Cooling Tank, 6,835 gallons	STAR, 7.25	E624.40 C627.3, C627.4, C627.5, & PU628	ST628.190
V601.1	Tank, 3,246 gallons	STAR, 7.25		
P602.80	Decanter	STAR, 7.25		
V602.1	Tank1, 3,246 gallons	STAR, 7.25		
V603.1	Tank 2, 3,252 gallons	STAR, 7.25		
V608.1	SRC Transfer Tank, 1,309 gallons	STAR, 7.25		
D606.1/ E606.40	Dryer with Heat Exchanger	STAR, 7.25, 7.08	F606.50, E624.40 C627.3, C627.4, C627.5 & PU628	ST628.190
V606.30	Transfer Vessel 680 gallons	STAR, 7.25	E624.40 C627.3, C627.4, C627.5 & PU628	ST628.190
PU607	Big-Bag Filling Unit	STAR, 7.25, 7.08	V332.30 & PU628	ST628.190
W67 – Waste gas Treatment				
V610.1	Recovered Solvent Storage (Transfer Vessel) Tank 1,500 gal	STAR, 7.25	C627.3, C627.4, C627.5, & PU628	ST628.190
V624.1	Recovered Solvent Storage (Transfer Vessel) Tank 1,500 gal	STAR, 7.25		
V626.1	Recovered Solvent Storage (Transfer Vessel) Tank 1,500 gal	STAR, 7.25	PU628	ST628.190
W68 - Utilities				
E011.1/E011.2	Cooling Tower (Insignificant Activity)	7.08	NA	Fugitive
PU075	Emergency Generator, Kohler, Model 250REOZJE, Tier 3 Engine, 255 KW, 342 HP, Displacement 9 liters	40 CFR 60 Subpart III, 40 CFR 63 Subpart ZZZZ	NA	ST075.190
	Emergency Generator Tank, 472 gallons (Insignificant Activity)	1.02, Appendix A, Section 3.9.2	NA	
P-0001	Fire Pump, Clarke, 86 HP, Displacement 4.5 Liters	40 CFR 60 Subpart III 40 CFR 63 Subpart ZZZZ	NA	S1000.190
T-0001	Fire Pump Tank, 185 gallons (Insignificant Activity)	1.02, Appendix A, Section 3.9.2	NA	S1000.191
NA	Valves and Flanges	STAR, 7.25	NA	Fugitive
W69 – Waste Water Treatment⁷				
V691.1	Emergency Drainage Tank, 12,764 gallons	STAR	NA	ST691.190
V650.1	Phase Separator, 3,600 gallons	STAR, 7.25	NA	ST650.190
V650.30	Phase Separator, 15 gallons	STAR, 7.25	NA	ST650.190
V651.1	Waste Water Tank 1, 8,000 gallons	STAR, 7.25	NA	ST651.190
V651.2	Waste Water Tank 2, 8,000 gallons	STAR, 7.25	NA	ST651.190

⁶ Submerged fill is not required since the stored vapor pressure is less than 1.5 psia.

⁷ V690.1 is a Blow-Down Tank (ST 690.190) that does not generate emissions.

Control Device				
Control ID	Description	Performance Indicator ⁸	Control Efficiency	Stack ID
F240.50	Wuxi - Baghouse/Fabric Filter	Differential pressure (0.5 -10 in H ₂ O) on bags/filters as an indication that the baghouses are operational	95%	ST628.190
F244.50	Wuxi - Baghouse/Fabric Filter		95%	ST628.190
F330.50	Wuxi - Baghouse/Fabric Filter		95%	ST628.190
F332.50	Wuxi - Baghouse/Fabric Filter		95%	ST628.190
F335.50	Wuxi - Baghouse/Fabric Filter		95%	ST628.190
F337.50	Wuxi - Baghouse/Fabric Filter		95%	ST628.190
F606.50	Wuxi - Baghouse/Fabric Filter		95%	ST628.190
C627.3	VUM – Eductor, using Sodium Hydroxide solution as the scrubbing liquid, to control non-VOC HAP	pH Range: 7 – 11.5 Liquid Flow Pressure Range: 40 – 75 psi	99.5% HAP	ST628.190
C627.4	VUM – Recirculated Packed Bed Scrubber (Stage 1), using Sodium Hydroxide solution as the scrubbing liquid, to control non-VOC HAP	pH Range: 9 – 13 Liquid Flow Pressure Range: 20 – 55 psi		ST628.190
C627.5	VUM – Recirculated Packed Bed Scrubber (Stage 2), using Sodium Hydroxide solution as the scrubbing liquid, to control non-VOC HAP			ST628.190
E610.40	Jinshan Boiler – Shell & Tube Condenser ⁹ (BACT)	Maximum Exhaust Stream Temperature: - 20 ° C (- 4 ° F)	95%	ST628.190
E624.40	Jinshan Boiler – Shell & Tube Condenser ⁹ (BACT)	Maximum Exhaust Stream Temperature: - 20 ° C (- 4 ° F)	95%	ST628.190
E626.40	Jinshan Boiler – Shell & Tube Condenser ⁹ (BACT)	Maximum Exhaust Stream Temperature: - 20 ° C (- 4 ° F)	95%	ST628.190
V244.30	Normag - Absorber	Visual inspection for presence of white oil absorption medium.	95%	ST628.190
V244.31	Normag - Absorber		95%	ST628.190
V332.30	Normag - Absorber		95%	ST628.190
V332.31	Normag - Absorber		95%	ST628.190
V337.30	Normag - Absorber		95%	ST628.190
PU628	Zeeco – Natural Gas Non-assisted Flare		Visual inspection for presence of flame or flame detector	98%

⁸ Performance Indicators may be re-established through performance testing.

⁹ Condensers (E610.40, E624.40, E626.40) have been determined to represent Best Available Control Technology (BACT) at 95% control efficiency for controlling volatile organic compounds for Regulation 7.25 per the BACT Analysis dated March 31, 2014, revised July 9, 2014, revised September 5, 2014.

Specific Conditions

S1. Standards (Regulation 2.03, section 6.1)

a. VOC

- i. The owner or operator shall not allow or cause the plant-wide VOC emissions to equal or exceed 100 tons during any consecutive 12-month period¹⁰. (Regulations 2.05)
- ii. For equipment V131.1, Valves/Flanges, V650.1, V650.30, V651.1, and V651.2; the owner or operator shall not allow or cause the plant-wide VOC emissions to exceed 5 tons per consecutive 12-month period, unless modeling or a BACT analysis has been submitted to, and approved by, the District. (Regulation 7.25, section 3)
- iii. For equipment V160.1, R200.1, R201.1, R220.1, P230.80, V231.1, V232.1, V234.1, D240.1/E240.40, V240.30, V244.1, PU300.80, PU305.80, R300.1, R305.1, R310.1, R315.1, F320.1, F325.1, R311.1, R316.1, V321.1, V323.1, V326.1, V322.1, V327.1, V328.1, D330.1/E330.40, V330.30, D335.1/E335.40, V335.30, V332.1, V337.1, E403.41/C403.10/E403.40/E403.42, V403.30, E403.43/C403.20/E403.44, V403.31, C413.10/E413.40/E413.41, V413.30, C414.10/E414.40/E414.41, V414.30, C415.10/E415.40/E415.41, V415.30, V437.1, V600.1, V601.1, P602.80, V602.1, V603.1, V608.1, D606.1/E606.40, and V606.30; where condensers E610.40, E624.40, and E626.40 are considered BACT; the owner or operator shall utilize VOC BACT¹¹ as defined below: (Regulation 7.25, section 3)
 - 1) The owner or operator shall not allow the combined VOC emissions from the process equipment subject to Regulation 7.25 controlled by condensers E610.40, E624.40, and E626.40; to exceed 46.83 tons during any consecutive 12-month period. (BACT) (Regulation 7.25, section 3.1)
 - 2) The owner or operator shall operate condensers E610.40, E624.40, and E626.40; at all times the process equipment subject to Regulation 7.25 controlled by the condensers is in operation. (BACT) (Regulation 7.25, section 3.1)
 - 3) For condensers E610.40, E624.40, and E626.40; when the process equipment is in operation, the exhaust stream temperature shall not exceed -20°C (-4°F) unless a new maximum exhaust stream temperature is established through performance testing.
- iv. For the equipment V100.30, V100.31, V110.30, V110.31, V140.30, V140.31, C100.1, C110.1, V136.1, C140.1, F244.51, 244.90, 244.91,

¹⁰ This project is not major for PSD/NSR since the Company has accepted synthetic minor limits.

¹¹ The Company submitted a BACT analysis dated March 31, 2014; revised June 13, 2014; revised September 5, 2014; and revised April 11, 2016; that demonstrated venting to condensers E610.40, E624.40, and E626.40; is considered BACT at 95% control efficiency. The District accepted the BACT determination.

PU244, F332.51, F337.51, PU332.81, PU337.81, 332.90, 337.90, PU332.82, PU337.82, C406.1/C406.2, V406.30, PU607, V610.1, V624.1, and V626.1; where flare PU628 is considered BACT; the owner or operator shall utilize VOC BACT as defined below: (Regulation 7.25, section 3)¹²

- 1) The owner or operator shall not allow the combined VOC emissions to exceed 0.60 tons during any consecutive 12-month period. (BACT) (Regulation 7.25, section 3.1)
 - 2) The owner or operator shall operate flare PU628 at all times the process equipment is in operation. (BACT) (Regulation 7.25, section 3.1)
- v. For storage vessels¹³ subject to Regulation 7.12:
- 1) For storage vessels V132.1, V137.1, V161.1, V417.1, V417.2 and V407.1; the owner or operator shall not store materials with an as stored vapor pressure of greater than or equal to 1.5 psia in the storage vessels. (Regulation 7.12, section 3)
 - 2) The owner or operator shall equip storage vessels V101.1, V400.1, V404.1, V410.1, V420.1, V427.1, V428.1, V447.1, and V448.1; with a permanent submerged fill pipe. (Regulation 7.12, Section 3.3)
- vi. The owner or operator of storage vessels V400.1, V404.1, V410.1, V420.1, V447.1, and V448.1 shall equip each with a closed vent system and control device (Condensers E624.40 or E626.40 as the primary control device with Flare PU628 as a back-up control device) meeting the following specifications: (40 CFR 60.112b(a)(3)) (40 CFR 60.112b(b)(1))
- 1) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, subpart VV, §60.485(b). (40 CFR 60.112b(a)(3)(i))
 - 2) A Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used: (40 CFR 60.485(b)(1))
 - (a) Zero air (less than 10 ppm of hydrocarbon in air); and (40 CFR 60.485(b)(1)(i))

¹² The Company submitted a BACT analysis dated June 8, 2015; updated August 7, 2015; and updated April 11, 2016; demonstrating that venting to flare PU628 is considered BACT at 98% control efficiency. The District accepted the BACT determination.

¹³ 40 CFR 60 Subpart Kb applies to tanks that are greater than or equal to (75 m³) 19,812.9 gallons.

- (b) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. (40 CFR 60.485(b)(1)(ii))
- 3) Control devices (E624.40, E626.40, & PU628) shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. Condensers E624.40 and E626.40 shall be considered the primary control device to comply with 40 CFR 60 Subpart Kb. (40 CFR 60.18) of the General Provisions. (40 CFR 60.112b(a)(3)(ii))
- 4) Operate the closed vent system and control devices (E624.40 and E626.40) and monitor the parameters of the closed vent system and control devices (E624.40 and E626.40) in accordance with the operating plan submitted to the District in accordance with 40 CFR 60.113b(c)(1), unless the plan was modified by the District during the review process. In this case, the modified plan applies. (40 CFR 60.113b(c)(2))
- 5) In the event that condensers E624.40 & E626.40 do not achieve 95% control, the flare will be used as the control device to comply with 40 CFR 60 Subpart Kb and it shall meet the specifications described in the general control device requirements (40 CFR 60.18) of the General Provisions. (40 CFR 60.112b(a)(3)(ii))
 - (a) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. (40 CFR 60.18(c)(1))
 - (b) Flares shall be operated with a flame present at all times, as determined by the methods specified in 40 CFR 60.18(f). (40 CFR 60.18(c)(2))
 - (c) The owner or operator has the choice of adhering to either the heat specifications in 40 CFR 60.18(c)(3)(ii) and the maximum tip velocity specifications in 40 CFR 60.18(c)(4) or adhering to the requirements in 40 CFR 60.18(c)(3)(i). (40 CFR 60.18(c)(3))
 - (i) Requirements in 40 CFR 60.18(c)(3)(ii) and 40 CFR 60.18(c)(4):
 - (A) Flares shall be used only with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is non-assisted. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3) in Specific Condition S2.a.xi.4). (40 CFR 60.18(c)(3)(ii).

- (B) Non-assisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec).(40 CFR 60.18(c)(4)(i))

OR

- (ii) Requirements in 40 CFR 60.18(c)(3)(i):

- (A) Flares shall be used that have a diameter of 3 inches or greater,¹⁴ 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 less than the velocity, V_{max} , as determined by the following equation: (40 CFR 60.18(c)(3)(i)(A))

$$V_{max} = (X_{H_2} - K_1) * K_2$$

Where:

V_{max} = Maximum permitted velocity, m/sec

K_1 = Constant, 6.0 volume-percent hydrogen

K_2 = Constant, 3.9(m/sec)/volume-percent hydrogen

X_{H_2} = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77.

- (B) The actual exit velocity of a flare shall be determined by the method specified in 40 CFR (f)(4). (40 CFR 60.18(c)(3)(i)(B))

- (d) Flares shall be steam-assisted, air-assisted, or non-assisted. (40 CFR 60.18(c)(6))¹⁵

- 6) In the event that the condensers do not achieve 95% control, the flare (PU628) will be used to comply with 40 CFR 60 Subpart Kb. If the flare is used as the Subpart Kb control device, it shall be operated at all times when emissions may be vented to them. (40 CFR 60.18(e)) (40 CFR 60.113b(d))

¹⁴ Flare PU628 has a diameter of 5 feet.

¹⁵ Flare PU628 is "non-assisted."

- b. **HAP¹⁶**
- i. The owner or operator shall not allow or cause the plant-wide emissions of any single HAP to equal or exceed 10 tons during any consecutive 12-month period. (Regulation 2.16)
 - ii. The owner or operator shall not allow or cause the plant-wide total HAP emissions to equal or exceed 25 tons during any consecutive 12-month period. (Regulation 2.16)
- c. **PM/PM₁₀/PM_{2.5}**
- i. The owner or operator shall not allow or cause the plant-wide PM/PM₁₀/PM_{2.5} emissions to equal or exceed 100 tons during any consecutive 12-month period. (Regulations 2.04 and 2.05)¹⁷
 - ii. For each piece of equipment subject to Regulation 7.08, the owner or operator shall not allow or cause PM emissions to exceed 2.34 lb/hr based on actual operating hours in a calendar day.¹⁸ (Regulation 7.08, section 3.1.2)
 - iii. For emission points D606.1 and PU607, the owner or operator shall operate the control device at all times the process is in operation.¹⁸ (Regulation 7.08, section 3.1.2)
- d. **Opacity**
- The owner or operator shall not allow or cause visible emissions to equal or exceed twenty percent (20%) opacity. (Regulation 7.08, section 3.1.1)
- e. **TAC**
- i. The owner or operator shall not allow emissions of any TAC to exceed environmentally acceptable (EA) levels, whether specifically established by modeling or determined by the District to be *de minimis*. (Regulations 5.00 and 5.21)
 - ii. The owner or operator shall not allow emissions of hydrogen chloride (HCl) to exceed *de minimis* levels.^{19, 20} (Regulations 5.00 and 5.21)

¹⁶ 40 CFR 63 Subpart VVVVVV applies to this facility, but there are no target HAPs listed in Table 1 of 40 CFR 63 Subpart VVVVVV associated with this project.

¹⁷ This project is not major for PSD/NSR since the Company has already accepted synthetic minor limits.

¹⁸ The potential PM emissions from all emission points in this project subject to Regulation 7.08, except for emission points D606.1 and PU607, cannot exceed the standard uncontrolled. Emission points D606.1 and PU607 cannot exceed the standard controlled.

¹⁹ As of the effective date of this permit, the *de minimis* levels of hydrogen chloride (HCl) are 6,720 pound per year and 7.56 pounds per hour based on an annual averaging period.

²⁰ The potential HCl emissions from emission points R310.1, R311.1, R315.1, and R316.1, can exceed the *de minimis* levels for HCl uncontrolled. Reactors 310.1 & R315.1 will be required to be controlled to be *de minimis* on an annual basis and an hourly basis. R311.1 & R316.1 will be required to be controlled to be *de minimis* on an annual basis. The uncontrolled potential emissions from reactors R311.1 & R316.1 are below the pound per hour *de minimis* level.

- iii. The owner or operator shall operate the eductor and two-stage scrubber (C627.3, C627.4, C627.5) at all times reactors R310.1, R311.1, R315.1, & R316.1 are in operation in order to be *de minimis* for Hydrochloric Acid.²⁰ (Regulations 5.21, section 4.3)
- iv. For eductor C627.3 when the process equipment is in operation, the owner or operator shall:
 - 1) Maintain a pH range of 7-11.5 unless a new pH range is established through performance testing.
 - 2) Maintain a nozzle pressure of 40-75 psi unless a new nozzle pressure range is established through performance testing.
- v. For two-stage scrubber C627.4 and C627.5 when the process equipment is in operation, the owner or operator shall:
 - 1) Maintain a pH range of 9-13 unless a new pH range is established through performance testing.
 - 2) Maintain a nozzle pressure of 20-55 psi unless a new nozzle pressure range is established through performance testing.

f. Unit Operation

- i. For Emergency Generator PU075:
 - 1) The owner or operator of a 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that is not a fire pump engine (PU075) shall comply with the emission standards (Table 1) obtained from 40 CFR 89.112(a) for Tier 3 engines, the family emission limits (Table 2) obtained from 40 CFR 89.112(d), or the voluntary standards for “Blue Sky Series” engines from Table 3 of 40 CFR 89.112(f)(1) and smoke emission standards (Table 4) obtained from 40 CFR 89.113(a). (40 CFR 60.4205(b) & 40 CFR 60.4202(a)(2))²¹

Table 1 to 40 CFR 89.112(a) EPA Tier 1–3 Nonroad Diesel Engine Emission Standards, g/kW-hr

Maximum Engine Power	Tier	Model Year	NO _x	HC	NMHC +NO _x	CO	PM
225 ≤ kW ≤ 450	Tier 3	2006	-	-	4.0	3.5	0.2

²¹ Per 40 CFR 1039.801, a “non-road engine” means all internal-combustion engines except motor vehicle engines, stationary engines, engines used solely for competition, or engines used in aircraft. Since PU075 is a stationary engine, PU075 does not meet the definition of “non-road engine” in 40 CFR 1039.801 and is not subject to 40 CFR 1039.

Table 2 to 40 CFR 89.112(d) EPA Tier 1-3 Upper Limit for Family Emission Limits, g/kW-hr

Maximum Engine Power	Tier	Model Year	NO _x	HC	NMHC +NO _x	PM
225 ≤ kW ≤ 450	Tier 3	2006	-	-	6.4	0.54

Table 3 to 40 CFR 89.112(f)(1) Voluntary Standards for “Blue Sky Series” Engines, g/kW-hr

Maximum Engine Power	NMHC+NO _x	PM
130 ≤ kW ≤ 560	4.0	0.12

Table 4 to 40 CFR 89.113(a) Smoke Emission Standards

Smoke Emission Standards
(1) 20% during the acceleration mode (2) 15% during the lugging mode; or (3) 50% during the peaks in either the acceleration or lugging modes.

- 2) The owner or operator that is required to comply with the emission standards specified in 40 CFR 60, Subpart IIII shall do all of the following: (40 CFR 60.4211(a))
 - (a) Operate and maintain the stationary CI internal combustion engine according to the manufacturer's emission-related written instructions; (40 CFR 60.4211(a)(1))
 - (b) Change only those emission-related settings that are permitted by the manufacturer; (40 CFR 60.4211(a)(2))

ii. For Fire Pump P-0001:

Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to 40 CFR 60 Subpart IIII, for all pollutants. (40 CFR 60.4205(c))

Table 4 to 40 CFR 60 Subpart IIII:

Maximum Engine Power	Model Years(s)	NMHC + NO _x	CO	PM
56 ≤ KW < 75	2010 & earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
(75 ≤ HP < 100)	2011 + 1	4.7 (3.5)		0.40 (0.30)

- iii. In order for the each engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing and operation in non-emergency situations for 50 hours per year, as described below, is prohibited. If the owner or operator does not operate the engine according to the requirements below, the engine will not be considered an emergency engine under this subpart and

shall meet all requirements for non-emergency engines. (40 CFR 60.4211(f))

- 1) There is no time limit on the use of emergency stationary ICE in emergency situations. (40 CFR 60.4211(f)(1))
- 2) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. Except as provided in 40 CFR 60.4211(f)(3)(i), 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. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: (40 CFR 60.4211(f)(3) & 40 CFR 60.4211(f)(3)(i))
 - (a) The engine is dispatched by the local balancing authority or local transmission and distribution system operator; (40 CFR 60.4211(f)(3)(i)(A))
 - (b) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. (40 CFR 60.4211(f)(3)(i)(B))
 - (c) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. (40 CFR 60.4211(f)(3)(i)(C))
 - (d) The power is provided only to the facility itself or to support the local transmission and distribution system. (40 CFR 60.4211(f)(3)(i)(D))
 - (e) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator. (40 CFR 60.4211(f)(3)(i)(E))

g. **Fuel Requirements**

The owner or operator of a stationary CI ICE subject to 40 CFR 60 Subpart III with a displacement of less than 30 liters per cylinder (PU075) that uses diesel fuel shall use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel. (40 CFR 60.4207(b))

- i. Sulfur content: 15 parts per million (ppm) maximum for NR diesel fuel. (40 CFR 80.510(b)(1)(i))
- ii. A minimum cetane index of 40; or (40 CFR 80.510(b)(2)(i))
- iii. A maximum aromatic content of 35 volume percent. (40 CFR 80.510(b)(2)(ii))

S2. Monitoring and Record Keeping (Regulation 2.03, section 6.1)

a. VOC

- i. For each VOC emission point, the owner or operator shall monthly monitor and maintain records of the throughput of all VOC containing materials during each calendar month.
- ii. The owner or operator shall monthly calculate and record the plant-wide consecutive 12-month VOC emissions for each month in the reporting period. This must include all Emission Points and fugitive sources. Where appropriate, the specific Emission Point control efficiencies and/or emission factors shall be applied. The calculations shall be performed as follows unless otherwise approved in writing by the District: (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

$$VOC = \sum_1^x \{[(U_x \times C_{Capx}) \times (1 - C_{Conx})] + [(U_x \times (1 - C_{Capx}))]\} + \sum_1^z U_z + F$$

Where:

- VOC = Total plant-wide emissions of VOCs
- U_x = Uncontrolled VOC emission from each Emission Point (x)
- C_{Capx} = Capture efficiency of each Emission Point (x)
- C_{Conx} = Control Efficiency of each control device for each Emission Point (x)
- U_z = Uncontrolled VOC emissions from each uncontrolled Emission Point (z)
- F = Total plant-wide fugitive VOC emissions

- iii. For the equipment V131.1, Valves/Flanges, V650.1, V650.30, V651.1, and V651.2; the owner or operator shall monthly calculate and record the plant-wide consecutive 12-month VOC emissions for each month in the reporting period.
- iv. For the equipment venting to condensers E610.40, E624.40, and E626.40 (V160.1, R200.1, R201.1, R220.1, P230.80, V231.1, V232.1, V234.1, D240.1/E240.40, V240.30, V244.1, PU300.80, PU305.80, R300.1, R305.1, R310.1, R315.1, F320.1, F325.1, R311.1, R316.1, V321.1, V323.1, V326.1, V322.1, V327.1, V328.1, D330.1/E330.40, V330.30, D335.1/E335.40, V335.30, V332.1, V332.7, V403.30, E403.41/C403.10/E403.40/E403.42, V403.31, C413.10/E413.40/E413.41, V413.30, C414.10/E414.40/E414.41, V414.30, C415.10/E415.40/E415.41, V415.30, V437.1, V600.1, V601.1, P602.80,

V602.1, V603.1, V608.1, D606.1/E606.40, and V606.30), the owner or operator shall keep the following records:

- 1) The owner or operator shall monthly calculate and record the monthly and consecutive 12-month VOC emissions for each month in the reporting period.
- 2) For any period of time when the process was operating and a VOC control device was not operating, the owner or operator shall maintain the following records:
 - (a) The duration of the control device downtime;
 - (b) The process throughput during the control device downtime;
 - (c) The emissions of VOC (tons), VOC (tons/month), VOC (tons/12-month period); and
 - (d) Summary information on the cause of the event, corrective action taken, and measures implemented to prevent reoccurrence.
- 3) For condensers (E610.40, E624.40, and E626.40):
 - (a) The owner or operator shall daily monitor and record the exhaust stream of condensers to ensure the exhaust stream temperature does not exceed -20°C (-4°F) (unless a different exhaust stream temperature has been established through performance testing). If the process equipment is not in operation on a given day, a negative declaration shall be recorded.
 - (b) If temperature records indicate that temperature ranges have been exceeded, the owner or operator shall inspect the condenser within 24 hours of the excursion, and perform a root cause analysis. The owner or operator shall maintain daily records of the results of the inspection, the results of the root cause analysis, and any corrective action performed.
- v. For the equipment venting to the flare PU628 (V100.30, V100.31, V110.30, V110.31, V140.30, V140.31, C100.1, C110.1, V136.1, C140.1, F244.51, 244.90, 244.91, PU244, F332.51, F337.51, PU332.81, PU337.81, 332.90, 337.90, PU332.82, PU337.82, C406.1/C406.2, V406.30, PU607, V610.1, V624.1, and V626.1):
 - 1) The owner or operator shall monthly calculate and record the plant-wide consecutive 12-month VOC emissions for each month in the reporting period.

- 2) For any period of time when the process was operating and a VOC control device was not operating, the owner or operator shall maintain the following records:
 - (a) The duration of the control device downtime;
 - (b) The process throughput during the control device downtime;
 - (c) The emissions of VOC (tons), VOC (tons/month), VOC (tons/12-month period); and
 - (d) Summary information on the cause of the event, corrective action taken, and measures implemented to prevent reoccurrence.
- vi. The owner or operator shall monthly perform a visual inspection of the structural and mechanical integrity of condensers E610.40, E624.40, and E626.40; for signs of damage, air leakage, corrosion, fouling, plugging, or other equipment defects, and repair and/or replace defective components as needed. The owner or operator shall maintain monthly records of the results.
- vii. The owner or operator of storage vessels V132.1, V137.1, V161.1, V417.1, V417.2 and V407.1; shall maintain a list of the materials that are stored in the vessel(s) and the corresponding vapor pressure and if the contents of the storage vessels are changed to a material not on the list then a record shall be made of the new contents, the new vapor pressure, and the date of change.
- viii. The owner or operator shall keep a record that shows if storage vessels V101.1, V400.1, V404.1, V410.1, V420.1, V427.1, V428.1, V447.1, and V448.1; are equipped with a submerged fill pipe. Submerged fill pipe means any fill pipe the discharge of which is entirely submerged when the liquid level is 6 inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean every fill pipe the discharge opening of which is entirely submerged when the liquid level is 2 times the fill pipe diameter above the bottom of the tank.
- ix. The owner or operator shall semi-annually perform and record an inspection of the storage vessels subject to Regulation 7.12 to ensure there are no visible holes or other openings.
- x. The owner or operator of storage vessels (V404.1, V410.1, V420.1, V447.1, and V448.1) controlled by condensers E624.40 and E626.40 shall maintain a copy of the operating plan and a record of the measured values of the parameters monitored in accordance with 40 CFR 60.113b(c)(2). (40 CFR 60.115b(c))
- xi. In the event that the condensers do not achieve 95% control, the flare (PU628) will be used as the Subpart Kb control device. If the flare is used as the Subpart Kb control device, the owner or operator for storage vessels

(V400.1, V404.1, V410.1, V420.1, V447.1, and V448.1) shall meet the requirements as specified in the general control device requirements as follows: (40 CFR 60.113b(d))

- 1) [Method 22](#) of 40 CFR 60 Appendix A shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22. (40 CFR 60.18(f)(1))
- 2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. (40 CFR 60.18(f)(2))
- 3) The net heating value of the gas calculated using the following equation: (40 CFR 60.18(f)(3))

$$H_T = K \phi \sum_{i=1}^n C_i H_i$$

$$K = 1.740 \times 10^{-7} \left(\frac{1}{ppm} \right) \left(\frac{g \text{ mole}}{scm} \right) \left(\frac{MJ}{kcal} \right)$$

Where the standard temperature for $\left(\frac{g \text{ mole}}{scm} \right)$ is 20°C

Where:

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

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference [Method 18](#) and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90 (Reapproved 1994) (Incorporated by reference as specified in §60.17); and

H_i = Net heat of combustion of sample component i, kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in §60.17) if published values are not available or cannot be calculated.

- 4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference [Methods 2, 2A, 2C, or 2D](#) as appropriate; by the unobstructed (free) cross sectional area of the flare tip. (40 CFR 60.18(f)(4))

- 5) The maximum permitted velocity, V_{max} , for flares complying with 40 CFR 60.18(c)(4)(iii) shall be determined by the following equation. (40 CFR 60.18(f)(5))

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8)/31.7$$

V_{max} = Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T = The net heating value as determined in Specific Condition S2.g.(2)(iii).

- xii. In the event that the condensers do not achieve 95% control, the flare (PU628) will be used as the Subpart Kb control device. If the flare is used as the Subpart Kb control device, owners or operators of flares shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. (40 CFR 60.18(d))
- xiii. In the event that the condensers do not achieve 95% control, the flare (PU628) will be used as the Subpart Kb control device. If the flare is used as the Subpart Kb control device, the owner or operator of storage vessels (V400.1, V404.1, V410.1, V420.1, V447.1, and V448.1) shall keep records of all periods of operation during which the flare pilot flame is absent. (40 CFR 60.115b(d)(2))
- xiv. The owner or operator of storage vessels (V400.1, V404.1, V410.1, V420.1, V447.1, and V448.1) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. (40 CFR 60.116b(b))

b. HAP

- i. For each HAP emission point, the owner or operator shall monthly calculate and record the monthly throughput of each HAP-containing raw material and the HAP content.
- ii. The owner or operator shall monthly calculate and record the *plant-wide* consecutive 12-month emissions of each single HAP and total HAP for each month in the reporting period. This must include all Emission Points and fugitive sources. Where appropriate, the specific Emission Point control efficiencies and/or emission factors shall be applied. The calculation shall be performed as follows unless otherwise approved in writing by the District: (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

$$HAP_A = \sum_1^x \{ [(U_x \times C_{Capx}) \times (1 - C_{Conx})] + [(U_x \times (1 - C_{Capx}))] \} + \sum_1^z U_z + F$$

Where:

- HAP_A = Total plant-wide emissions of an individual HAP (A)
- U_x = Uncontrolled HAP emission from each Emission Point (x)
- C_{Capx} = Capture efficiency of each Emission Point (x)

C_{Conx}	=	Control Efficiency of each control device for each Emission Point (x)
U_z	=	Uncontrolled HAP emissions from each uncontrolled Emission Point (z)
F	=	Total plant-wide fugitive HAP emissions

c. **PM/PM₁₀/PM_{2.5}**

- i. For each PM/PM₁₀/PM_{2.5} emission point, the owner or operator shall monthly monitor and maintain records of the throughput of each raw material during each calendar month.
- ii. The owner or operator shall monthly calculate and record the plant-wide consecutive 12-month PM/PM₁₀/PM_{2.5} emissions for each month in the reporting period. This must include all Emission Points and fugitive sources. Where appropriate, the specific Emission Point control efficiencies and/or emission factors shall be applied. The calculation shall be performed as follows unless otherwise approved in writing by the District: (See Attachment A – Default Emission Factors, Calculation Methodologies, & Stack Tests)

PM/PM₁₀/PM_{2.5}

$$= \sum_{x=1}^x \{ [(U_x \times C_{capx}) \times (1 - C_{conx})] + [(U_x \times (1 - C_{capx}))] \} + \sum_{z=1}^z U_z + F$$

Where:

PM/PM₁₀/PM_{2.5} = Total plant-wide emissions of PM/PM₁₀/PM_{2.5}

U_x = Uncontrolled PM emission from each Emission Point (x)

C_{capx} = Capture efficiency of each Emission Point (x)

C_{conx} = Control Efficiency of each control device for each Emission Point (x)

U_z = Uncontrolled PM/PM₁₀/PM_{2.5} emissions from each uncontrolled Emission Point (z)

F = Total plant-wide fugitive PM/PM₁₀/PM_{2.5} emissions

- iii. The owner or operator shall monthly perform a visual inspection of the structural and mechanical integrity of F240.50, F244.50, F330.50, F332.50, F335.50, F337.50, F606.50, V244.30, V244.31, V332.30, V332.31, and V337.30, for signs of damage, air leakage, corrosion, or other equipment defects, and repair and/or replace defective components as needed. The owner or operator shall maintain monthly records of the results.
- iv. For emission points D606.1 and PU607, for any period of time when the process was operating and a PM/PM₁₀/PM_{2.5} control device was not operating, the owner or operator shall maintain the following records:
 - 1) The duration of the control device downtime;
 - 2) The process throughput during the control device downtime;

- 3) The emissions of PM (lb/hr) and PM/PM₁₀/PM_{2.5} (tons); and
- 4) Summary information on the cause of the event, corrective action taken, and measures implemented to prevent reoccurrence.

d. **Opacity**

- i. For each referenced PM/PM₁₀/PM_{2.5} emission point except for the cooling towers, the owner or operator shall conduct a monthly one-minute visible emissions survey during normal process operation of each PM/PM₁₀/PM_{2.5} emission point. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is wholly within a building.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9 within 24 hours of the initial observation.
- iii. The owner or operator shall maintain monthly records of the results of all visible emissions surveys and Method 9 tests performed. The records shall include the date of each survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

e. **TAC**

- i. The owner or operator shall maintain records sufficient to demonstrate environmental acceptability, including, but not limited to SDS, analysis of emissions, and/or modeling results.
- ii. The owner or operator shall re-evaluate the environmental acceptability and document the environmentally acceptable emissions if a new TAC is introduced or the content of a TAC in a raw material increases above *de minimis*.
- iii. For emission points R310.1, R311.1, R315.1, and R316.1, for any period of time when the process was operating and a TAC control device was not operating, the owner or operator shall maintain the following records:
 - 1) The duration of the control device downtime;
 - 2) The process throughput during the control device downtime;
 - 3) The emissions of HCl (lb/hr) and HCl (tons/year); and
 - 4) A statement if the event did or did not impact the environmental acceptability demonstration.
 - 5) Summary information on the cause of the event, corrective action taken, and measures implemented to prevent reoccurrence.

- 6) A negative declaration if no by-passes occurred.
- iv. The owner or operator shall maintain the following records for eductor C627.3:
 - 1) Maintain daily records of the pH;
 - 2) Maintain daily records of the nozzle pressure;
 - 3) Record a negative declaration for any day the process was not operating.
 - 4) Record any parameter excursions and corrective actions taken.
- v. The owner or operator shall maintain the following records for the two stage scrubber (C627.4, C627.5):
 - 1) Maintain daily records of the pH;
 - 2) Maintain daily records of the nozzle pressure;
 - 3) Record a negative declaration for any day the process was not operating.
 - 4) Record any parameter excursions and corrective actions taken.

f. **Unit Operation**

The owner or operator shall monthly record the hours of operation of PU075 and P-0001.

g. **Fuel Requirements**

For PU075, the owner or operator shall maintain records of the fuel SDS sheets and receipts showing dates, amounts of fuel purchased, sulfur content of fuel purchased and supplier's name and address.

S3. **Reporting (Regulation 2.03, section 6.1)**

The owner or operator shall submit the compliance reports that include the information in these sections. All reports shall include the company name, plant ID number, and the beginning and ending date of the reporting period. The compliance reports shall clearly identify any deviation from a permit requirement. Duplicative reporting is not required. For example, information required to be submitted in Periodic Reports required by a MACT is not required to also be reported in the semiannual reports. If no deviations occur in the reporting period, the owner or operator shall report a negative declaration in the appropriate report. All compliance reports shall include the following certification statement per Regulation 2.16, section 3.5.11.

- “Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete.”
- Signature and title of the responsible official of the company.

The semi-annual compliance reports are due on or before the following dates of each calendar year:

Reporting Period

Report Due Date

January 1 - June 30
July 1 - December 31

August 29
March 1 of the following year (Feb. 29 for leap year)

a. **VOC**

- i. The owner or operator shall report the plant-wide consecutive 12-month emissions of VOCs for each month in the reporting period.
- ii. For the equipment V131.1, Valves/Flanges, V650.1, V650.30, V651.1, and V651.2; the owner or operator shall report the consecutive 12-month emissions of VOCs for each month in the reporting period.
- iii. For the equipment controlled by condensers E610.40, E624.40, and E626.40 (V160.1, R200.1, R201.1, R220.1, P230.80, V231.1, V232.1, V234.1, D240.1/E240.40, V240.30, V244.1, PU300.80, PU305.80, R300.1, R305.1, R310.1, R315.1, F320.1, F325.1, R311.1, R316.1, V321.1, V326.1, V322.1, V323.1, V327.1, V328.1, D330.1/E330.40, V330.30, D335.1/E335.40, V335.30, V332.1, V337.1, E403.41/C403.10/E403.40/E403.42, V403.30, E403.43/C403.20/E403.44, V403.31, C413.10/E413.40/E413.41, V413.30, C414.10/E414.40/E414.41, V414.30, C415.10/E415.40/E415.41, V415.30, V437.1, V600.1, V601.1, P602.80, V602.1, V603.1, V608.1, D606.1/E606.40, and V606.30); the owner or operator shall report the following:
 - 1) The consecutive 12-month emissions of VOCs for each month in the reporting period.
 - 2) Identification of all periods when a process was operating and an associated control device was not operating, including the information in S2.a.iv.2), or a negative declaration if the control device was operating at all times the process was operating during the reporting period.
 - 3) For condensers E610.40, E624.40, and E626.40; The owner or operator shall report any temperature excursions, including the information recorded in S2.a.iv.3). If there were no temperature excursions during the reporting period, the owner or operator shall report a negative declaration.
- iv. For the equipment venting to the flare PU628 (V100.30, V100.31, V110.30, V110.31, V140.30, V140.31, C100.1, C110.1, V136.1, C140.1, F244.51, 244.90, 244.91, PU244, F332.51, F337.51, PU332.81, PU337.81, 332.90, 337.90, PU332.82, PU337.82, C406.1/C406.2, V406.30, PU607, V610.1, V624.1, V626.1), the owner or operator shall report the following:
 - 1) The consecutive 12-month emissions of VOCs for each month in the reporting period.
 - 2) Identification of all periods when a process was operating and an associated control device was not operating, including the

information in S2.a.v.2), or a negative declaration if the control device was operating at all times the process was operating during the reporting period.

- v. The owner or operator shall report any deviations from monitoring and recordkeeping requirements, or a negative declaration if requirements were met.
- vi. For storage vessels V132.1, V137.1, V161.1, V417.1, V417.2 and V407.1; the owner or operator shall report any change of contents that would result in a vapor pressure greater than or equal to 1.5 psia or report a negative declaration.
- vii. The owner or operator shall submit a notification of the date construction (or reconstruction as defined under 40 CFR 60.15) of an affected facility is commenced postmarked no later than 30 days after such date. (40 CFR 60.7(a)(1))
- viii. The operating plan shall be submitted to the District for approval and shall contain: (40 CFR 60.113b(c)(1):
 - 1) Documentation demonstrating that the control device (E624.40 and E626.40) will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. (40 CFR 60.113b(c)(1)(i)).
 - 2) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters). (40 CFR 60.113b(c)(1)(ii)).
- ix. In the event that the condensers do not achieve 95% control, the flare (PU628) will be used as the Subpart Kb control device. If the flare is used as the Subpart Kb control device to comply with 40 CFR 60.112b, the owner or operator shall submit a report containing the measurements required by 60.18(f)(1), (2), (3), (4), (5), and (6) shall be furnished to the District as required by 40 CFR 60.8. This report shall be submitted within 6 months of the initial start-up date. (40 CFR 60.115b(d)(1))
- x. In the event that the condensers do not achieve 95% control, the flare (PU628) will be used as the Subpart Kb control device. If the flare is used as the Subpart Kb control device, the owner or operator shall submit semi-

annual reports of all periods recorded under 40 CFR 60.115b(d)(2) in which the pilot flame was absent. (40 CFR 60.115b(d)(3))

b. HAP

- i. The owner or operator shall report the consecutive 12-month plant-wide emissions of each individual HAP for each month in the reporting period.
- ii. The owner or operator shall report the consecutive 12-month plant-wide emissions of total HAP for each month in the reporting period.

c. PM/PM₁₀/PM_{2.5}

- i. The owner or operator shall report the plant-wide consecutive 12-month PM/PM₁₀/PM_{2.5} emissions for each month in the reporting period.
- ii. The owner or operator shall report any failure to perform the visual inspection of the structural and mechanical integrity of F240.50, F244.50, F330.50, F332.50, F335.50, F337.50, F606.50, V244.30, V244.31, V332.30, V332.31, and V337.30.
- iii. For emission point D606.1 and PU607, identification of all periods when a process was operating and an associated control device was not operating, including the information in S2.c.iv., or a negative declaration if the control device was operating at all times the process was operating during the reporting period.

d. Opacity

- i. The date and time of each VE Survey where visible emissions were observed and the results of the Method 9 test performed;
- ii. Identification of all periods of exceeding the opacity standard;
- iii. Description of any corrective action taken for each exceedance of an opacity standard specified in this permit; and
- iv. Any deviation from the requirement to perform or record the results of the required monthly VE surveys or Method 9 tests.
- v. If there were no deviations during the report period, report a negative declaration.

e. TAC

- i. Within 6 months after a change of a raw material, the owner or operator shall submit the re-evaluated EA demonstration to the District.
- ii. The owner or operator shall report any conditions that were inconsistent with those conditions analyzed in the most recent Environmental Acceptability Demonstration or a negative declaration stating that operations were within the conditions analyzed. This includes, but is not limited to, control device upset conditions.
- iii. For any conditions outside the analysis, the owner or operator shall re-analyze to determine whether these conditions comply with the STAR program. Changes to the air dispersion modeling program or

meteorological data used in the most recent Environmental Acceptability Demonstration do not trigger the requirement to re-analyze. (Regulations 5.00 and 5.21, sections 4.22 – 4.24)

- iv. For emission points R310.1, R311.1, R315.1, and R316.1, identification of all periods when a process was operating and an associated control device was not operating, including the information in S2.e.iii., or a negative declaration if the control device was operating at all times the process was operating during the reporting period.
- v. For scrubber C627.3, the owner or operator shall report the following:
 - 1) Any failure to maintain daily records of the pH or nozzle pressure;
 - 2) Any excursions of the pH range or nozzle pressure.
 - 3) Any corrective actions taken for any excursions of the pH range or nozzle pressure.
 - 4) Report a negative declaration if no deviations occurred during the report period.
- vi. For scrubber C627.4 and C627.5, the owner or operator shall report the following:
 - 1) Any failure to maintain daily records of the pH or scrubbing liquid nozzle pressure;
 - 2) Any excursions of the pH range or scrubbing liquid nozzle pressure.
 - 3) Any corrective actions taken for any excursions of the pH range or scrubbing liquid nozzle pressure.
 - 4) Report a negative declaration if no deviations occurred during the report period.

f. **Unit Operation**

- i. The owner or operator is not required to submit an initial notification. (40 CFR 60.4214(b))
- ii. The owner or operator shall identify all periods of exceeding the hour limits specified in Specific Condition S1.f.iii. during the reporting period. The compliance report shall include the following:
 - 1) Identification of all periods during which a deviation occurred;
 - 2) A description, including the magnitude, of the deviation;
 - 3) If known, the cause of the deviation;
 - 4) A description of all corrective actions taken to abate the deviation; and
 - 5) If no deviations occur during a reporting period, the report shall contain a negative declaration.

- iii. For an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates for the purposes specified in S1.f.iii.3(a), the owner or operator shall submit an annual report according to the requirements in the following paragraphs: (40 CFR 60.4214(d))
- 1) Company name and address where the engine is located. (40 CFR 60.4214(d)(1)(i))
 - 2) Date of the report and beginning and ending dates of the reporting period. (40 CFR 60.4214(d)(1)(ii))
 - 3) Engine site rating and model year. (40 CFR 60.4214(d)(1)(iii))
 - 4) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place. (40 CFR 60.4214(d)(1)(iv))
 - 5) Hours operated for the purposes specified in 40 CFR 60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR 60.4211(f)(2)(ii) and (iii). (40 CFR 60.4214(d)(1)(v))
 - 6) Number of hours the engine is contractually obligated to be available for the purposes specified in 40 CFR 60.4211(f)(2)(ii) and (iii). (40 CFR 60.4214(d)(1)(vi))
 - 7) Hours spent for operation for the purposes specified in 40 CFR 60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR 60.4211(f)(3)(i). The report shall also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine. (40 CFR 60.4214(d)(1)(vii))
 - 8) The first report shall cover the calendar year 2015 and shall be submitted no later than March 31, 2016. Subsequent reports for each calendar year shall be submitted as required by your operating permit. (40 CFR 60.4214(d)(2))
 - 9) The report shall be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report shall be submitted to the Administrator at the appropriate address listed in 40 CFR 60.4. (40 CFR 60.4214(d)(3))

g. **Fuel Requirements**

There are no routine compliance reporting requirements.

h. **Start-Up Notification**

The owner or operator shall provide written notification to the District of the actual date of initial startup. This notification shall be post marked within 15 days after normal operation has been achieved. (Regulation 7.01, Section 5.1.3)

S4. **Testing (Regulation 2.03, section 5.1)**

The owner or operator shall use the most recent District accepted performance test results to demonstrate compliance with the emission limits and in the annual emission inventory reporting.

The owner or operator shall construct all equipment in such a manner that the following testing requirements can be performed.

a. **VOC**

- i. The owner or operator shall perform an EPA Reference Method 25A performance test on the inlet and outlet of the control devices (E610.40, E624.40, and E626.40) within 60 days after achieving maximum production rate, but no later than 180 days after initial startup. The test shall be performed at 90% or higher of maximum capacity, or allowable/permitted capacity, or at a level of capacity which results in the greatest emissions and is representative of the operations. Failure to perform the test, at maximum capacity, allowable/permitted capacity, or at a level of capacity which resulted in the greatest emissions, may necessitate a re-test or necessitate a revision of the allowable/permitted capacity of the process equipment depending upon the difference between the testing results and the limit.
- ii. The owner or operator shall submit written compliance test plans (protocol) for the control efficiency. They shall include the EPA test methods that will be used for compliance testing, the process operating parameters that will be monitored during the performance test, and the control device performance indicators (e.g. pressure drop, exhaust stream temperature) that will be monitored during the performance test. The compliance test plans shall be furnished to the District at least 30 days prior to the actual date of the performance test. Attached to the permit is a Protocol Checklist for Performance Test for the information to be submitted in the protocol. The owner or operator shall provide the District at least 10 days prior notice of any performance test to afford the District the opportunity to have an observer present.
- iii. The owner or operator shall furnish the District with a written report of the results of the performance test within 60 days following the actual date of completion of the performance test.

b. **HAP**

See Specific Condition S4.e.

- c. **PM/PM₁₀/PM_{2.5}**

There are no testing requirements for this pollutant.
- d. **Opacity**

There are no testing requirements for this pollutant.
- e. **TAC**
 - i. The owner or operator shall perform an EPA Reference Method 26 performance test on the inlet and outlet of the control device series (C627.3, C627.4, C627.5) within 60 days after achieving maximum production rate, but no later than 180 days after initial startup. The test shall be performed at 90% or higher of maximum capacity, or allowable/permitted capacity, or at a level of capacity which results in the greatest emissions and is representative of the operations. Failure to perform the test, at maximum capacity, allowable/permitted capacity, or at a level of capacity which resulted in the greatest emissions, may necessitate a re-test or necessitate a revision of the allowable/permitted capacity of the process equipment depending upon the difference between the testing results and the limit.
 - ii. The owner or operator shall submit written compliance test plans (protocol) for the control efficiency. They shall include the EPA test methods that will be used for compliance testing, the process operating parameters that will be monitored during the performance test, and the control device performance indicators (e.g., pH range, volumetric inlet air flow rate, scrubbing liquid flow rate) that will be monitored during the performance test. The compliance test plans shall be furnished to the District at least 30 days prior to the actual date of the performance test. Attached to the permit is a Protocol Checklist for Performance Test for the information to be submitted in the protocol.
 - iii. The owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an accredited audit sample provider (AASP) for each test method used for regulatory compliance purposes. (40 CFR 60.8(g)(1))

Attachment A - Default Emission Factors, Calculation Methodologies, & Stack Tests

Generally, emissions are calculated by multiplying the throughput (ton, MMCF, gallons, etc) or hours of operation of the equipment by the appropriate emission factor and accounting for any control devices unless otherwise approved in writing by the District. Approved emission factors determined by future stack test can replace the emission factors below:

Emission Point ID	Description	Acceptable Emission Factor Sources
W62 - Tank Farm		
V100.70	Mobile Temporary Container	AP-42 Chapter 7.1
C100.1	Dryer	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V100.30	Dryer Vessel	
V100.31	Dryer Vessel	
V101.1	Storage Tank (Submerged Fill)	AP-42 Chapter 7.1
V110.70	Mobile Temporary Container	AP-42 Chapter 7.1
C110.1	Dryer	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V110.30	Dryer Vessel	
V110.31	Dryer Vessel	
V131.1	Processing Tank	AP-42 Chapter 7.1
V132.1	Storage Tank	AP-42 Chapter 7.1
V136.1	Processing Tank	AP-42 Chapter 7.1
V137.1	Storage Tank	AP-42 Chapter 7.1
V140.70	Mobile Temporary Container	AP-42 Chapter 7.1
C140.1	Dryer	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V140.30	Dryer Vessel	
V140.31	Dryer Vessel	
V150.1	Storage Tank I	AP-42 Chapter 7.1
V151.1	Storage Tank II	AP-42 Chapter 7.1
V160.1	Vessel	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V161.1	Storage Tank	AP-42 Chapter 7.1
PU203	Bag Emptying Unit	1% Loss PM/PM ₁₀ /PM _{2.5}
R200.1	Reactor 1	Vapor Displacement & Vessel Heating Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
R201.1	Reactor 2	
R220.1	Reactor	Vapor Displacement & Vessel Heating Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
P230.80	Decanter	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V231.1	Re-suspension Storage Tank 1	
V232.1	Re-suspension Storage Tank 2	
V234.1	SRS Transfer Tank	
D240.1/E240.40	Dryer with Heat Exchanger	1% Loss PM/PM ₁₀ /PM _{2.5}

Emission Point ID	Description	Acceptable Emission Factor Sources
V240.30	Transfer Vessel	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V244.1	Blender	1% Loss PM/PM ₁₀ /PM _{2.5} Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
F244.51	Vibrating Sieve	0.5% Loss PM/PM ₁₀ /PM _{2.5} Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
244.90	Container/Drum Filling Unit	1% Loss PM/PM ₁₀ /PM _{2.5} Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
244.91	Container/Drum Filling Unit	
PU244	Drum Emptying Unit	
W64 – Catalyst Production		
PU300.80	Container Emptying Unit – Line 1	1% Loss PM/PM ₁₀ /PM _{2.5} Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
PU305.80	Container Emptying Unit – Line 2	
R300.1	Reactor – Line 1	1% Loss PM/PM ₁₀ /PM _{2.5} Vapor Displacement & Vessel Heating Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
R305.1	Reactor – Line 2	
R310.1	Reactor I – Line 1	Vapor Displacement & Vessel Heating Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
R315.1	Reactor I – Line 2	
F320.1	Filter – Line 1	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
F325.1	Filter – Line 2	
R311.1	Reactor II – Line 1	Vapor Displacement & Vessel Heating Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
R316.1	Reactor II – Line 2	
V321.1	Recycled Storage Tank with agitation – Line 1	AP-42 Chapter 7.1
V326.1	Recycled Storage Tank with agitation – Line 2	AP-42 Chapter 7.1
V322.1	Recycled Storage Tank – Line 1	AP-42 Chapter 7.1
V323.1	SRC Transfer Tank – Line 1	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V327.1	Recycled Storage Tank – Line 2	
V328.1	SRC Transfer Tank – Line 2	

Emission Point ID	Description	Acceptable Emission Factor Sources
D330.1/E3 30.40	Dryer with Heat Exchanger – Line 1	1% Loss PM/PM ₁₀ /PM _{2.5}
V330.30	Transfer Vessel	Vapor Displacement Calculations from EPA Document, “Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document,” EPA-453/R-93-017, February 1994
D335.1/E3 35.40	Dryer with Heat Exchanger – Line 2	1% Loss PM/PM ₁₀ /PM _{2.5}
V335.30	Transfer Vessel	Vapor Displacement Calculations from EPA Document, “Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document,” EPA-453/R-93-017, February 1994
V332.1	Blender – Line 1	1% Loss PM/PM ₁₀ /PM _{2.5}
V337.1	Blender – Line 2	Vapor Displacement Calculations from EPA Document, “Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document,” EPA-453/R-93-017, February 1994
F332.51	Vibrating Sieve – Line 1	0.5% Loss PM/PM ₁₀ /PM _{2.5}
F337.51	Vibrating Sieve – Line 2	Vapor Displacement Calculations from EPA Document, “Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document,” EPA-453/R-93-017, February 1994
PU332.81	Drum Filling Unit – Line 1	1% Loss PM/PM ₁₀ /PM _{2.5} Vapor Displacement Calculations from EPA Document, “Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document,” EPA-453/R-93-017, February 1994
PU337.81	Drum Filling Unit – Line 2	
332.90	Off Spec Drum Filling Unit – Line 1	
337.90	Off Spec Drum Filling Unit – Line 2	
PU332.82	Drum Emptying Unit – Line 1	
PU337.82	Drum Emptying Unit – Line 2	
W65- Solvent Regeneration		
V400.1	SRS Storage Tank (Submerged Fill)	Vapor Displacement Calculations from EPA Document, “Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document,” EPA-453/R-93-017, February 1994 or AP-42 Chapter 7.1
E403.41/ C403.10/ E403.40/ E403.42	Reboiler with Column, Overhead Interchange and Condenser	1 kg VOC/hr per Manufacturer Information
V403.30	Reflux Vessel	Vapor Displacement Calculations from EPA Document, “Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document,” EPA-453/R-93-017, February 1994
E403.43/ C403.20/ E403.44	Reboiler with Column and Condenser	1 kg VOC/hr per Manufacturer Information
V403.31	Reflux Vessel	Vapor Displacement Calculations from EPA Document, “Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document,” EPA-453/R-93-017, February 1994
V404.1	Storage Tank (Submerged Fill)	AP-42 Chapter 7.1

Emission Point ID	Description	Acceptable Emission Factor Sources
C406.1/ C406.2	Dryer	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V406.30	Dryer Vessel	
V407.1	Storage Tank	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994 or AP-42 Chapter 7.1
V410.1	SRC Storage Tank I (Submerged Fill)	
V420.1	SRC Storage Tank II (Submerged Fill)	
C413.10/ E413.40/ E413.41	1 st Stage Distillation Column and Falling Film Evaporator with Condenser	AP-42 Emission Factor 3.3 lb VOC/ton (Table 4.7-1)
V413.30	Reflux Drum	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
C414.10/ E414.40/ E414.41	2 nd Stage Distillation Column and Falling Film Evaporator with Condenser	AP-42 Emission Factor 3.3 lb VOC/ton (Table 4.7-1)
V414.30	Reflux Drum	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
C415.10/ E415.40/ E415.41	3 rd Stage Distillation Column and Falling Film Evaporator with Condenser	AP-42 Emission Factor 3.3 lb VOC/ton (Table 4.7-1)
V415.30	Reflux Drum	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V447.1	Storage Tank (Submerged Fill)	AP-42 Chapter 7.1
V448.1	Storage Tank (Submerged Fill)	AP-42 Chapter 7.1
V427.1	Storage Tank (Submerged Fill)	AP-42 Chapter 7.1
V428.1	Storage Tank (Submerged Fill)	AP-42 Chapter 7.1
V437.1	Recycle Storage Tank/Mixing Vessel	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V417.1	Storage Tank	AP-42 Chapter 7.1
V417.2	Storage Tank	AP-42 Chapter 7.1
W66 – Co-Product Isolation		
V600.1	SRC Storage (Surge/Transfer Vessel with Agitation) and Cooling Tank	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V601.1	Tank	
P602.80	Decanter	
V602.1	Tank 1	
V603.1	Tank 2	

Emission Point ID	Description	Acceptable Emission Factor Sources
V608.1	SRC Transfer Tank	
D606.1/ E606.40	Dryer with Heat Exchanger	1% Loss PM/PM ₁₀ /PM _{2.5}
V606.30	Transfer Vessel	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
PU607	Big-Bag Filling Unit	1% Loss PM/PM ₁₀ /PM _{2.5}
W67 – Waste gas Treatment		
V610.1	Recovered Solvent Storage (Transfer Vessel) Tank	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V624.1	Recovered Solvent Storage (Transfer Vessel) Tank	
V626.1	Recovered Solvent Storage (Transfer Vessel) Tank	
PU628	Natural Gas Combustion Flare	AP-42 Chapter 13-5
W68 - Utilities		
E011.1/E01 1.2	Cooling Tower	AP-42 Chapter 13.4, Table 13.4-1
PU075	Emergency Generator, Kohler, Model 250REOZJE, Tier 3 Engine, 255 KW, 342 HP, Displacement 9 liters	Manufacturer Certification for PM, NO _x , CO and VOC AP-42 Chapter 3.3 for SO ₂ , CO ₂ and HAP
P-0001	Fire Pump, Clarke, 86 HP, Displacement 4.5 Liters	Manufacturer Certification for PM, NO _x , CO and VOC AP-42 Chapter 3.3 for SO ₂ , CO ₂ and HAP
Fugitives		SOCMI Default Zero Emission Rates
W69 – Waste Water Treatment		
V691.1	Emergency Drainage Tank	AP-42 Chapter 7.1
V650.1	Phase Separator	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994
V650.30	Phase Separator	
V651.1	Waste Water Tank 1	Vapor Displacement Calculations from EPA Document, "Control Volatile Organic Compound Emissions from Batch Processes – Alternative Control Techniques Information Document," EPA-453/R-93-017, February 1994 or AP-42 Chapter 7.1
V651.2	Waste Water Tank 2	

Attachment B – Protocol Checklist for a Performance Test

A completed protocol should include the following information:

- 1. Facility name, location, and ID #;
- 2. Responsible Official and environmental contact names;
- 3. Permit numbers that are requiring the test to be conducted;
- 4. Test methods to be used (i.e. EPA Method 1, 2, 3, 4, and 5);
- 5. Alternative test methods or description of modifications to the test methods to be used;
- 6. Purpose of the test including equipment and pollutant to be tested; the purpose may be described in the permit that requires the test to be conducted or may be to show compliance with a federal regulation or emission standard;
- 7. Tentative test dates (These may change but the District will need final notice at least 10 days in advance of the actual test dates in order to arrange for observation.);
- 8. Maximum rated production capacity of the system;
- 9. Production-rate goal planned during the performance test for demonstration of compliance (if appropriate, based on limits);
- 10. Method to be used for determining rate of production during the performance test;
- 11. Method to be used for determining rate of production during subsequent operations of the process equipment to demonstrate compliance;
- 12. Description of normal operation cycles;
- 13. Discussion of operating conditions that tend to cause worse case emissions; it is especially important to clarify this if worst case emissions do not come from the maximum production rate;
- 14. Process flow diagram;
- 15. The type and manufacturer of the control equipment, if any;
- 16. The control equipment (baghouse, scrubber, condenser, etc.) parameter to be monitored and recorded during the performance test. Note that this data will be used to ensure representative operation during subsequent operations. These parameters can include pressure drops, flow rates, pH, and temperature. The values achieved during the test may be required during subsequent operations to describe what pressure drops, etcetera, are indicative of good operating performance; and
- 17. How quality assurance and accuracy of the data will be maintained, including;
 - Sample identification and chain-of-custody procedures
 - If audit samples are required for this test method, audit sample provider and number of audit samples to be used
- 18. Pipe, duct, stack, or flue diameter to be tested;
- 19. Distances from the testing sample ports to the nearest upstream and downstream flow disturbances such as bends, valves, constrictions, expansions, and exit points for outlet and additionally for inlet;
- 20. Determine number of traverse points to be tested for outlet and additionally for inlet if required using Appendix A-1 to 40 CFR Part 60;
 - Method 1 if stack diameter is >12"
 - Method 1a if stack diameter is greater than or equal to 4" and less than 12"
 - Alternate method of determination for <4"
 - If a sample location at least two stack or duct diameters downstream and half a diameter upstream from any flow disturbance is not available then an alternative procedure is available for determining the acceptability of a measurement location. This procedure described in Method 1, Section 11.5 allows for the determination of gas flow angles at the sampling points and comparison of the measured results with acceptability criteria.
- 21. The Stack Test Review fee shall be submitted with each stack test protocol.