Special Conditions

Permit Numbers 156571, PSDTX1564, and GHGPSDTX195

1. This permit covers only those sources of emissions listed in the attached table entitled “Emission Sources - Maximum Allowable Emission Rates” (MAERT), and those sources are limited to the emission limits and other conditions specified in that table.

2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compounds (VOC) at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the MAERT. With the exception of devices which relieve to the atmosphere only in the event of a fire, any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions.

Federal Applicability

3. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources promulgated in Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):

   A. Subpart A, General Provisions.

   B. Subpart Db, Industrial-Commercial-Institutional Steam Generating Units.

   C. Subpart Kb, Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.

   D. Subpart VVa, Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.

   E. Subpart DDD, Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry.

   F. Subpart NNN, Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.

   G. Subpart RRR, Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.

   H. Subpart IIII, Stationary Compression Ignition Internal Combustion Engines.

4. These facilities shall comply with all applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories in 40 CFR Part 63:

   A. Subpart A, General Provisions.

   B. Subpart FFFF, Miscellaneous Organic Chemical Manufacturing.

   C. Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines.

   D. Subpart DDDDD, Industrial for Institutional, Commercial, and Industrial Boilers and Process Heaters.

Boilers

5. The following requirements shall apply to the boilers (EPNs 633BLR001, 633BLR002, 635BLR001, and 635BLR002):

   A. Except where provided otherwise in Paragraph D of this Special Condition, emissions of NO_X CO, and NH_3 from each boiler shall not exceed the following values.

      (1) Short-term average limits:

Pollutant	Emission Limit	Averaging Period
NO_X	0.0150 lb/MMBtu	1-hr
CO	100 ppmvd	1-hr
NH_3	10 ppmvd	24-hr

      (2) Long-term average limits:

Pollutant	Emission Limit	Averaging Period
NO_X	0.010 lb/MMBtu	Annual

   B. Compliance with the NO_X and CO emission limits of paragraph A shall be demonstrated through use of a continuous emission monitoring system (CEMS).

   C. The NH_3 concentration in the exhaust stack shall be tested or calculated according to one of the methods listed below and shall be tested or calculated according to frequency listed below. Testing for NH_3 slip is only required on days when the SCR unit is in operation.

      (1) Install, calibrate, maintain, and operate, as specified under Special Condition No. 40, a CEMS to measure and record the concentration of NH_3. The NH_3 concentration shall be corrected and reported in accordance with paragraph A.

      (2) Use a sorbent or stain tube device specific for NH_3 measurement in the 5 to 10 parts per million (ppm) range. The frequency of sorbent/stain tube testing shall be performed daily for the first 60 days of operation, after which the frequency may be reduced to weekly testing if operating procedures have been developed to prevent excess amounts of NH_3 from being introduced in the SCR units and when operation of the SCR units have been proven successful with regard to controlling NH_3 slip. Daily sorbent or stain tube testing shall resume when the catalyst is within 30 days of its useful life expectancy. These results shall be recorded and used to determine compliance with this Special Condition.

      If sorbent or stain tube testing indicates an NH_3 slip concentration which exceed 5 ppm at any time, the permit holder shall begin NH_3 testing by either the Phenol-Nitroprusside Method, the Indophenol Method, or the EPA Conditional Test Method (CTM) 27 on a quarterly basis, in addition to the weekly sorbent or stain tube testing. The quarterly testing shall continue until such time as the SCR unit catalyst is replaced; or if the quarterly testing indicates NH_3 slip is 4 ppm or less, the Nitroprusside/Indophenol/CTM 27 tests may be suspended until sorbent or stain tube testing again indicate 5 ppm NH_3 slip or greater. These results shall be recorded and used to determine compliance with this Special Condition.

      (3) Install, calibrate, maintain, and operate, as specified under Special Condition No. 40, a second NO_x CEMS upstream of the control device (in addition to the NO_x CEMS required under Special Condition No. 40). Perform the measurements and calculations associated with the mass balance method specified in 30 TAC § 117.8130(1), using

NO_x CEMS data to determine the NO_x concentration differential across the control device.

(4) Install and operate a dual stream system of NO_x CEMS at the exit of the SCR. One of the exhaust streams would be routed, in an unconverted state, to one NO_x CEMS and the other exhaust stream would be routed through a NH_3 converter to convert NH_3 to NO_x and then to a second NO_x CEMS. The NH_3 slip concentration shall be calculated according to the method specified in 30 TAC § 117.8130(2). These results shall be recorded and used to determine compliance with this Special Condition.

(5) Any other method used for measuring NH_3 slip shall require prior approval from the TCEQ Regional Director.

D. During non-routine operations for a boiler, and during the shakedown period, the requirements of subparagraph A(1) shall not apply. The emissions of NO_X during non-routine operations from each boiler shall not exceed the following value.

Pollutant	Emission Limit	Averaging Period
NO_X	0.0350 lb/MMBtu	1-hr and Annual

EPNs 633BLR001 and 633BLR002 shall not exceed 250 hours of non-routine operations per year for both boilers. EPNs 635BLR001 and 635BLR002 shall not exceed 250 hours of non-routine operations per year for both boilers. Records of boiler startup, shutdown, and low firing events shall specify the time and duration of the event.

Flares

6. The flares (EPNs 629FLR001, 629FLR002, 636FLR001, and 636FLR002) shall be designed and operated in accordance with the following requirements:

A. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity at all times when emissions may be vented to them.

The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate regional office to demonstrate compliance with these requirements.

B. The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple, infrared monitor, or ultraviolet monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

C. The flare shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. This shall be ensured by the use of steam assist to the flare.

D. The permit holder shall install a continuous flow monitor and calorimeter that provide a record of the vent stream flow and composition (Btu content) to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition (or Btu content) shall be recorded each hour.

The monitors shall be calibrated or have a calibration check performed on an annual basis to meet the following accuracy specifications: the flow monitor shall be accurate to ±5.0% of flow for velocities greater than 1 ft/s, and accurate to ±20% of flow for velocities between 0.1 ft/s and 1 ft/s; the temperature monitor shall be accurate to ±2.0% at absolute temperature; and pressure monitor shall be accurate to ±5.0 mm Hg.

The calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

The monitors and analyzers shall operate as required by this section at least 95% of the time when the flare is operational, averaged over a rolling 12 month period. Flared gas net heating value and actual exit velocity determined in accordance with 40 CFR §§60.18(f)(3) and 60.18(f)(4) shall be recorded at least once every hour.

7. Fuel gas combusted in the flares (EPNs 629FLR001, 629FLR002, 636FLR001, and 636FLR002) shall be sweet natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet. Compliance shall be verified in accordance with Special Condition No. 9.D.

Vapor Oxidizers

8. The following requirements shall apply to the LLDPE Plant Thermal Oxidizers (EPN 629FLR003 and EPN 629FLR004) and the HDPE Plant Thermal Oxidizers (EPN 636HRT001 and EPN 636HTR002):

   A. The thermal oxidizers shall maintain the VOC concentration in the exhaust gas less than 10 ppmv on a dry basis, corrected to 3 percent oxygen, or achieve a VOC destruction efficiency greater than 99.9 percent.

   B. The thermal oxidizer firebox exit temperature shall be maintained at not less than 1400°F and exhaust oxygen concentration not less than 3 percent on a six-minute average while waste gas is being fed into the oxidizer prior to initial stack testing. After the initial stack test has been completed, the six minute average temperature shall be equal to, or greater than the respective hourly average maintained during the most recent satisfactory stack testing required by Special Condition No. 41.

   C. The thermal oxidizer exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurement device shall reduce the temperature readings to an averaging period of 6 minutes or less and record it at that frequency. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5ºC.

   Quality assured (or valid) data must be generated when the thermal oxidizers are operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the thermal oxidizers operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

Fuel Gas

9. Combustion units are subject to the following requirements for fuel sulfur:

   A. The boilers shall be fired with natural gas and/or process gas.

   B. The thermal oxidizers shall be fired with natural gas.

   C. Natural gas, process gas, ethane, and ethylene shall have a total sulfur content not to exceed 5 grains per 100 dscf on a rolling 12-month average.

   D. Compliance with the requirements of paragraph C of this Special Condition shall be verified through sampling of fuel gas at least semi-annually. Fuel gas streams identified in paragraph C may be sampled individually, or a representative sample of blended fuel gas may be taken from the fuel gas header.

      For natural gas and commercial ethane, tariff sheets documenting the sulfur content of the fuel may be retained in lieu of performing sampling.

Compliance Assurance Monitoring

10. The following requirements apply to capture systems for the plant flare system.

   A. Either conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21 once a year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

   B. If there is a bypass for the flare, comply with either of the following requirements:

      (1) Install a flow indicator that records and verifies zero flow at least once every fifteen minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or

      (2) Once a month, inspect the valves, verifying that the position of the valves and the condition of the car seals that prevent flow out the bypass.

      A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service per this permit.

   C. The date and results of each inspection performed shall be recorded. If the results of any inspection are not satisfactory, the deficiencies shall be recorded and the permit holder shall promptly take necessary corrective action, recording each action with the date completed.

Production Limitations

11. Annual production from the permitted units shall not exceed the rate contained in the Table 2, Material Balance submitted with application form PI-1 dated April 18, 2019. The facility will produce copolymers and homopolymers to the hourly throughput constraints contained in the Table 2,

Material Balance submitted with application form PI-1 dated April 18, 2019. Production records shall be updated monthly with the pounds of each type of polymer produced during the previous month and rolling 12 months to date.

Polyethylene Residual VOC Emissions

12. Total VOC emitted to the atmosphere after the purge column through product loadout from each linear low-density polyethylene (LLDPE) unit shall not exceed 50 pounds VOC per million pounds of polyethylene pellets produced.

13. Total VOC emitted to the atmosphere after the extruder through product loadout from each high density polyethylene (HDPE) unit shall not exceed 80 pounds of VOC per million pounds of polyethylene pellets produced.

14. Ongoing compliance with VOC emission limits for the polyethylene pellet handling systems between each extruder/purge column and product loadout (inclusive) will be determined by calculation using monthly production rates and monthly average sampling and testing of the polyethylene for residual VOC at the following two locations: (A) immediately after the pellet extruder/purge column and (B) at final product loading. The VOC head space test attached to these conditions shall be used to determine the residual VOC. Monthly average sampling will be based on a minimum of three samples. Separate samples are required for each product type produced during the month.

    A. Samples of resin shall be collected at the following locations: (“point A”) immediately after the extruder/purge column, and (“point B”) at the final product loadout station.

    B. Sampling shall be performed for each product type produced during a calendar month. An exemption from sampling may be claimed for a particular product type if both of the following conditions are satisfied:

        (1) The product is produced for 72 hours or less during the month; and

        (2) Sampling has been conducted at the plant for the same product during the preceding 60 months, and documentation of the sampling results has been retained. The most recent such results shall be used in the calculations specified in Special Condition 15.

    C. Prior to the initial start-up of any polyethylene unit, the permit holder shall obtain a permit alteration to attach a VOC head space sampling protocol to the permit Special Conditions. The sampling protocol shall ensure measurement of the total residual VOC content of the polymer being sampled.

15. Polymer production rates and monitoring records shall be maintained at the plant site.

    A. Production and sampling records shall include (but are limited to):

        (1) Day and time of sample.

        (2) Actual plant production rate at the time of sampling and monthly production rate.

        (3) Product number and melt index.

        (4) Sampled residual VOC concentrations for each product type at each sampling point.

    B. Polymer handling emissions for a product type shall be calculated as follows:

$E_{Res} = C_A - C_B$

Where:

E_{Res} is the total polymer handling emission rate, expressed in units of lb VOC per MMlb polymer;

C_A is the residual VOC concentration of a representative sample of a particular polymer grade, taken at point A, expressed in units of ppmw; and

C_B is the residual VOC concentration of a representative sample of the same polymer grade, taken at point B, expressed in units of ppmw.

C. Monthly average VOC emissions for the polyethylene unit shall be calculated as follows:

$$E_{Res,Avg} = \sum_{i=1}^{n} w_i \times E_{Res}$$

Where:

$E_{Res,Avg}$ is the monthly average polymer handling emission rate, expressed in units of lb VOC per MMlb polymer.

n is the total number of product types produced during the month.

w_i is the mass fraction of total production at the unit consisting of product type i

E_{Res} is the residual VOC concentration calculated following paragraph B of this Special Condition.

Solids Handling

16. Particulate matter outlet grain loading shall not exceed 0.005 grain per dry standard cubic foot (dscf) of air from any vent identified in Special Condition No. 18. There shall be no visible emissions exceeding 30 seconds in any six-minute period as determined using EPA Test Method 22.

    The vents shall not operate unless any control devices and associated equipment are maintained in good working order and operating. All vents shall be inspected for visible emissions once per day and a spare parts filter inventory will be maintained on site. Records shall be maintained of all inspections and maintenance performed.

17. The following requirements apply to the particulate control devices identified in Special Condition No. 18.

    A. The differential pressure across each particulate control device shall be continuously monitored and be recorded at least once an hour.

    B. Prior to the start of operation of any polyethylene unit, the permit holder shall obtain a permit alteration which specifies the parametric monitoring requirements for each control device using pressure drop across the device. An alternate monitoring parameter may be specified for a particular control device if a pressure monitoring device is not incorporated into the design of such control device. The alternate monitoring parameter shall ensure that necessary preventative maintenance on the control device is completed in a timely manner.

C. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent. Differential pressure monitoring devices shall be accurate to within 0.5 inches water gauge pressure or 0.5 percent of span.

D. Quality assured (or valid) data must be generated when the polyethylene unit is operating except during the performance of a daily zero check. Loss of valid data due to periods of monitor breakdown, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in hours) that the polyethylene unit operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

18. The following sources of particulate emissions at the polyethylene units are covered by the permit.

A. OSBL polyethylene vents

EPN	Source Name	Vent Type
XXBH001X	XXBH001X Bag House	Baghouse
XXBH002X	Loading Station #1 Bag House	Baghouse
XXBH003X	XXBH003X Bag House	Baghouse
XXBH004X	XXBH004X Bag House	Baghouse
XXBH005X	XXBH005X Bag House	Baghouse
HOPLOAD1	LLDPE Hopper Car Loading Filter Vent	Baghouse
HOPLOAD2	HDPE Hopper Car Loading Filter Vent	Baghouse
XXWS011L	LLDPE Truck Trans Loading Filter Vent 1	Baghouse
XXWS012L	LLDPE Truck Trans Loading Filter Vent 2	Baghouse
XXWS011H	HDPE Truck Trans Loading Filter Vent 1	Baghouse
XXWS012H	HDPE Truck Trans Loading Filter Vent 2	Baghouse
XXWS013	LLDPE Truck Trans Loading Filter Vent 3	Baghouse
XXWS014	LLDPE Truck Trans Loading Filter Vent 4	Baghouse
XXBH006	LLDPE Truck Loadout Silo Vent 1	Baghouse
XXBH007	LLDPE Truck Loadout Silo Vent 2	Baghouse
XXBH008	LLDPE Truck Loadout Silo Vent 3	Baghouse
XXBH009	LLDPE Truck Loadout Silo Vent 4	Baghouse

B. HDPE polyethylene vents

EPN	Source Name	Vent Type
Z-491	Stabilizer Mixer Dust Collector	Baghouse
M-407	Pellet Spin Drier Blower Vent	Baghouse
C-411	Stabilizer Transfer Blower A through G	Baghouse
629FIL9005	Elutriator	Baghouse
629FIL9006	Elutriator	Baghouse
629FIL9007	Elutriator	Baghouse
629S9001	Blending Silo	Baghouse
629S9002	Blending Silo	Baghouse
629S9003	Blending Silo	Baghouse
629S9004	Blending Silo	Baghouse

C. LLDPE polyethylene vents

EPN	Source Name	Vent Type
U1-Y-7010	U1 Pellet Dryer Vent	Baghouse
U1-Y-6231	U1 Bag Station Dump Hopper Vent 1	Baghouse
U1-Y-6232	U1 Bag Station Dump Hopper Vent 2	Baghouse
U1-Y-6233	U1 Bag Station Dump Hopper Vent 3	Baghouse
U1-Y-6234	U1 Bag Station Dump Hopper Vent 4	Baghouse
U1-Y-6235	U1 Bag Station Dump Hopper Vent 5	Baghouse
U1-Y-6251	U1 Talc Surge Bin Filter Vent	Baghouse
U1-Y-6260	U1 Mixer Vent Filter Vent	Baghouse
U1-C-4040	U1 Catalyst Vent Filter	Sinter metal cartridge filter
U2-Y-7010	U2 Pellet Dryer Vent	Baghouse
U2-Y-6286	U2 Additive Surge Bin Filter Vent 1	Baghouse
U2-Y-6287	U2 Additive Surge Bin Filter Vent 2	Baghouse
U2-Y-6288	U2 Additive Surge Bin Filter Vent 3	Baghouse
U2-Y-6289	U2 Additive Surge Bin Filter Vent 4	Baghouse
U2-Y-6290	U2 Additive Surge Bin Filter Vent 5	Baghouse
U2-Y-6251	U2 Talc Surge Bin Filter Vent	Baghouse
U2-Y-6260	U2 Mixer Vent Filter Vent	Baghouse
U2-Y-4901	U2 Catalyst Vent Filter	Sinter metal cartridge filter
U3-Y-7310	U3 Pellet Dryer Vent	Baghouse
U3-Y-6586	U3 Additive Surge Bin Filter Vent 1	Baghouse
U3-Y-6587	U3 Additive Surge Bin Filter Vent 2	Baghouse
U3-Y-6588	U3 Additive Surge Bin Filter Vent 3	Baghouse
U3-Y-6589	U3 Additive Surge Bin Filter Vent 4	Baghouse
U3-Y-6590	U3 Additive Surge Bin Filter Vent 5	Baghouse
U3-Y-6551	U3 Talc Surge Bin Filter Vent	Baghouse
U3-Y-6560	U3 Mixer Vent Filter Vent	Baghouse
U3-Y-4902	U3 Catalyst Vent Filter	Sinter metal cartridge filter

Storage Tanks

19. Storage tank throughput, fill/withdrawal rate, and service shall be limited to the following:

Tank Identifier	Service	Fill/Withdrawal rate (gallons/hour)	Rolling 12 Month Throughput (gallons)	Control
EPN TK-DIESEL1	Diesel	1,703	5,000	atmosphere
EPN TK-DIESEL2	Diesel	1,703	5,000	atmosphere
EPN TK-DIESEL3	Diesel	1,703	5,000	atmosphere
EPN TK-DIESEL4	Diesel	1,703	5,000	atmosphere
EPN TK-DIESEL5	Diesel	1,703	5,000	atmosphere
EPN TK-DIESEL6	Diesel	1,703	5,000	atmosphere
EPN 633TK007	1-Hexene	18,000	76,735,410	IFR

Tank Identifier	Service	Fill/Withdrawal rate (gallons/hour)	Rolling 12 Month Throughput (gallons)	Control
FIN TK701	Hexane	36,960	323,769,600	EPN 636FLR001/ EPN 636FLR002
FIN TK702	Hexane	36,984	323,769,600	EPN 636FLR001/ EPN 636FLR002
FIN D-763	Oligomer	6,000	755,800	EPN 636FLR001/ EPN 636FLR002
FIN 633VES043	Low polymer product	15,000	5,369,150	EPN 636FLR001/ EPN 636FLR002
FIN 633VES043DX	Low polymer product	15,000	5,369,150	EPN 636FLR001/ EPN 636FLR002
FIN 633VES043XX	Low polymer product	15,000	5,369,150	EPN 636FLR001/ EPN 636FLR002
FIN LPDRUM	Low polymer product	15,000	5,369,150	EPN 636HTR001
FIN TK1-NH3	19% aqueous ammonia	300	761,371	EPN NH3SBR1
FIN TK2-NH3	19% aqueous ammonia	300	761,371	EPN NH3SBR2

20. Storage tanks are subject to the following requirements: The control requirements specified in parts A–E of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.

A. The tank emissions must be controlled as specified in one of the paragraphs below:

(1) An internal floating deck or “roof” shall be installed. A domed external floating roof tank is equivalent to an internal floating roof tank. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.

(2) All vents from Tanks FIN TK701, FIN TK702, FIN D-763, FIN 633VES043, FIN 633VES043DX, FIN 633VES043XX, FIN LPDRUM, FIN TK1-NH3, and FIN TK1-NH3 shall be routed to the control device identified in Special Condition No. 19.

B. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and any seal gap measurements specified in Title 40 Code of Federal Regulations § 60.113b (40 CFR § 60.113b) Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989) to verify fitting and seal integrity. Records shall be maintained of the dates inspection was performed, any measurements made, results of inspections and

measurements made (including raw data), and actions taken to correct any deficiencies noted.

C. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

D. The tanks shall be designed to completely drain its entire contents to a sump in a manner that limits the volume of free-standing liquid in the tank or the sump as follows:

NPS (in.)	V_U (gal.)
2	9
3	14
4	32
6	75

Where: NPS is the nominal piping size of the sump pipe; and

V_U is the maximum volume of free-standing liquid in the tank or sump.

E. Tanks shall be constructed or equipped with a connection for a vapor recovery system that routes vapors from the vapor space under the landed roof to a control device.

F. Except for labels, logos, etc. not to exceed 15 percent of the tank total surface area, uninsulated tank exterior surfaces exposed to the sun shall be white. Storage tanks must be equipped with permanent submerged fill pipes.

G. The permit holder shall maintain a record of tank throughput for the previous month and the past consecutive 12 month period for each tank.

21. The holder of this permit shall maintain the temperature of the liquid in the tanks storing Low Polymer product (FIN 633VES043, FIN 633VES043DX, FIN 633VES043XX, FIN LPDRUM) less than 320°F to maintain a vapor pressure of less than 32.2 psia at actual storage conditions. The tank temperature shall be continuously monitored and the temperature shall be recorded daily and during tank filling.

The temperature monitor shall be calibrated on an annual basis to meet an accuracy specification of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5ºC. Up to 5 percent invalid monitoring data is acceptable on a rolling 12 month basis provided it is only generated when the monitor is broken down, out-of-control (producing inaccurate data); being repaired, having maintenance performed, or being calibrated. The data availability shall be calculated as the total tank operating hours for which quality assured data was recorded divided by the total tank hours in service. Invalid data generated due to other reasons is not allowed. The measurements missed shall be estimated using engineering judgement and the methods used recorded.

Ammonia Storage and Unloading

22. All ammonia vapors generated during unloading of ammonia and depressurization of ammonia storage and transport vessels shall be captured and directed to the ammonia scrubber (EPNs TK1-NH3 and TK2-NH3). The ammonia scrubber shall meet the following requirements:

A. The scrubbers (EPNs TK1-NH3 and TK2-NH3) shall operate with no less than 99 percent removal efficiency for ammonia on an hourly average.

B. Prior to the start of operations of the facilities covered by this permit, the permit holder shall obtain a permit alteration or permit amendment which updates the representations on TCEQ Table 13 for the scrubbers.

Truck and Railcar Loading

23. Loading operations are limited to the liquids identified below at the rates indicated. All loading shall be submerged.

Liquid	Gallons per hour	Gallons/rolling 12 months
Oligomer	6,000	755,800
Low Polymer product	15,000	5,369,150

Rolling 12 month rack throughput records shall be updated on a monthly basis for each product loaded.

24. All lines and connectors shall be visually inspected for any defects prior to hookup. Lines and connectors that are visibly damaged shall be removed from service. Operations shall cease immediately upon detection of any liquid leaking from the lines or connections.

25. Emissions generated from the loading of Low Polymer shall be vented to the thermal oxidizer (EPN 636HTR001).

26. In order to ensure 100% capture efficiency during railcar loading, the following requirements must be met:

A. Each railcar to be loaded shall be pressure certified by Department of Transportation (DOT) Class DOT-111AW or Class DOT-115AW testing or equivalent within the past 12 months prior to loading. The holder of this permit shall not allow a railcar to be loaded unless it has provided a certificate which shows the date the railcar last passed the leak-tight test required by this condition and the identification number of the railcar. Records of the date on which the testing was performed and the test method used shall be maintained for each railcar loaded.

B. Hard-piped or bolted connections, and/or dry lock design hard piped loading arms shall be used for all pressurized loading operations.

C. Each railcar to be loaded shall be designed to handle a pressure of 15 psi gauge or greater.

D. Each railcar to be loaded shall not be equipped with a spew gauge.

Cooling Towers

27. The VOC associated with the cooling tower (EPN 633CTW001X and EPN 634CTW001) water shall be monitored monthly with an air stripping system meeting the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or an approved equivalent

sampling method. The results of the monitoring, cooling water flow rate and maintenance activities on the cooling water system shall be recorded. The monitoring results and cooling water hourly mass flow rate shall be used to determine cooling tower hourly VOC emissions. The rolling 12 month cooling water emission rate shall be recorded on a monthly basis and be determined by summing the VOC emissions between VOC monitoring periods over the rolling 12 month period. The emissions between VOC monitoring periods shall be obtained by multiplying the total cooling water mass flow between cooling water monitoring periods by the higher of the two VOC monitored results.

28. The cooling towers (EPN 633CTW001X and EPN 634CTW001) and wet surface air cooler (EPN 637WSAC001) shall be operated and monitored in accordance with the following:

A. The cooling towers (EPN 633CTW001X and EPN 634CTW001) shall each be equipped with drift eliminators having manufacturer's design assurance of 0.0010% drift or less. The wet surface air cooler (EPN 637WSAC001) shall be equipped with drift eliminators having manufacturer's design assurance of 0.0005% drift or less. Drift eliminators shall be maintained and inspected at least annually. The permit holder shall maintain records of all inspections and repairs.

B. Total dissolved solids (TDS) shall not exceed 1,200 parts per million by weight (ppmw). Dissolved solids in the cooling water drift are considered to be emitted as PM, PM_{10}, and $PM_{2.5}$ as represented in the permit application calculations.

C. Cooling towers shall be analyzed for particulate emissions using one of the following methods:

(1) Cooling water shall be sampled at least once per day for total dissolved solids (TDS); or

(2) TDS monitoring may be reduced to weekly if conductivity is monitored daily and TDS is calculated using a ratio of TDS-to-conductivity (in ppmw per µmho/cm or ppmw/siemens). The ratio of TDS-to-conductivity shall be determined by concurrently monitoring TDS and conductivity on a weekly basis. The permit holder may use the average of two consecutive TDS-to-conductivity ratios to calculate daily TDS; or

(3) TDS monitoring may be reduced to quarterly if conductivity is monitored daily and TDS is calculated using a correlation factor established for each cooling tower. The correlation factor shall be the average of nine consecutive weekly TDS-to-conductivity ratios determined using C(2) above provided the highest ratio is not more than 10% larger than the smallest ratio.

(4) The permit holder shall validate the TDS-to-conductivity correlation factor once each calendar quarter. If the ratio of concurrently sampled TDS and conductivity is more than 10% higher or lower than the established factor, the permit holder shall increase TDS monitoring to weekly until a new correlation factor can be established.

D. Cooling water sampling shall be representative of the cooling tower feed water and shall be conducted using approved methods.

(1) The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, or SM 2540 C [SM - 19th edition of Standard Methods for Examination of Water]. Water samples should be capped upon collection, and transferred to a laboratory area for analysis.

(2) The analysis method for conductivity shall be either ASTM D1125-14 Test Method A (field or routine laboratory testing) or ASTM D1125-14 Test Method B (continuous

monitor). The analysis may be conducted at the sample site or with a calibrated process conductivity meter. If a conductivity meter is used, it shall be calibrated at least annually. Documentation of the method and any associated calibration records shall be maintained.

(3) Alternate sampling and analysis methods may be used to comply with D(1) and D(2) with written approval from the TCEQ Regional Director.

(4) Records of all instrument calibrations and test results and process measurements used for the emission calculations shall be retained.

E. Emission rates of PM, PM_{10} and $PM_{2.5}$ shall be calculated using the measured TDS and the ratio or correlation of TDS to conductivity measurements, the design drift rate and the daily maximum and average actual cooling water circulation rate for the short term and annual average rates. Alternately, the design maximum circulation rate may be used for all calculations. Emission records shall be updated monthly.

Wastewater Treatment Plant

29. Process wastewater drains shall be equipped with water seals or equivalent. Water seals shall be checked by visual or physical inspection quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls. Water seals shall be restored as necessary within 24 hours. Records shall be maintained of these inspections and corrective actions taken.

30. The daily total wastewater flow into the wastewater treatment plant shall be monitored and recorded. The rolling 12 month wastewater flow shall be totaled on a monthly basis.

31. Emissions from the flash drum and sump shall be controlled by the thermal oxidizer (EPN 636HTR001). Emissions from the equalization tank, the coagulation tank, flocculation tank, and Dissolved Air Floatation (DAF) unit, shall be routed to the Air Stripper.

32. Wastewater treatment plant emissions shall be estimated every month using the following procedure.

A. The permit holder shall sample the wastewater monthly to determine the concentrations of all air contaminants. Sampling locations, sampling procedures, test methods and calculations shall be as follows:

(1) The sampling location shall be at the inlet to the flash drum;

(2) Sampling procedures shall be as specified in the TPDES permit applicable to the site. A copy of the TPDES permit and any precedent application representations shall be submitted for inclusion in the file for this permit prior to the start of operation of the facilities covered by this permit;

(3) Test methods shall include EPA SW-846 methods 8260B, 8270C, and 8015B; and

(4) Calculations shall be as specified in permit application, PI-1 dated April 18, 2019, as updated.

The influent wastewater flow rates shall be measured and recorded when a sample required by this condition is collected. Records of sampling results shall be maintained for all air contaminants.

B. The permit holder shall calculate short term loading rate in terms of lb/hr and rolling 12-month loading rate in terms of tpy for each air contaminant. The measured concentrations of each speciated air contaminant shall be converted to an equivalent mass emission rate based upon the flow rates during the sample collection period using the calculation methods and assumptions in the permit application, PI-1 dated April 18, 2019, as updated. The short term emission rate calculations for such air contaminants shall be based on the concentrations and flow rates measured during sampling. The rolling 12-month emission rate calculation for each air contaminant shall be based on the rolling 12-month average contaminant concentration and the rolling 12-month wastewater flow. All other inputs into the calculation shall match those in the permit application for that averaging period (worst case). Total VOC mass emission rates shall be calculated as the sum of the individual speciated VOC mass emission rates.

C. Records shall include the sampling location, sampling procedures, chain of custody forms, test methods, sampling results, calculated emission rates, and sample of calculations.

Emergency Engines

33. The following requirements apply to emergency generators (EPN GEN1, GEN2, GEN3, and GEN4), and the emergency firewater pumps (EPN FWP1 and EPN FWP2):

A. Fuel for the engines shall be limited to ultra-low sulfur diesel (ULSD) containing no more than 15 ppmw total sulfur.

B. The engine shall be limited to 100 hours per year during non-emergency situations, as defined at 40 CFR § 63.6640(f).

C. The engine shall be equipped with a non-resettable hour meter.

D. Each emergency generator shall satisfy the Tier 4 exhaust emission standards specified at 40 CFR § 1039.101 for model years 2015 and later.

E. Each firewater pump shall satisfy the Tier 3 exhaust emission standards specified at 40 CFR § 89.112.

F. Compliance with the emission limits of paragraph D and E of this Special Condition shall be demonstrated by retaining a copy of the manufacturers' certificate of conformity, or through other methods receiving prior written approval of the TCEQ Executive Director.

Fugitives

Piping, Valves, Connectors, Pumps, Agitators, and Compressors – 28VHP

34. Except as may be provided for in the Special Conditions of this permit, the following requirements apply to the above-referenced equipment:

A. The requirements of paragraphs F and G shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

- piping and instrumentation diagram (PID);
- a written or electronic database or electronic file;
- color coding;
- a form of weatherproof identification; or
- designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in Paragraph A above. If an unsafe to monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe to monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

(1) a cap, blind flange, plug, or second valve must be installed on the line or valve;

or

(2) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once within the 72 hour period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and

must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. If a relief valve is equipped with rupture disc, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service.

G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days and a record of the attempt shall be maintained.

I. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a

scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shut down as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and the TCEQ Executive Director may require early unit shut down or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items G through H of this condition.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

28CNTQ (Connectors Inspected Quarterly)

35. In addition to the weekly physical inspection required by Item E of Special Condition No. 34, all accessible connectors in gas/vapor and light liquid service shall be monitored quarterly with an approved gas analyzer in accordance with Items F thru J of Special Condition No. 34.

A. Allowance for reduced monitoring frequencies.

(1) The frequency of monitoring may be reduced from quarterly to semiannually if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

(2) The frequency of monitoring may be reduced from semiannually to annually if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

B. If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph. The percent of connectors leaking used in paragraph A shall be determined using the following formula:

$$\frac{C_l + C_s}{C_t} \times 100 = C_p$$

Where:

C_l = the number of connectors found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

C_s = the number of connectors for which repair has been delayed and are listed on the facility shutdown log.

C_t = the total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor connectors.

C_p = the percentage of leaking connectors for the monitoring period.

Piping, Valves, Pumps, and Compressors in Contact with Ammonia – 28AVO

36. Except as may be provided for in the Special Conditions of this permit, the following requirements apply to the above-referenced equipment:

    A. Audio, olfactory, and visual checks for leaks within the operating area shall be made once per shift.

    B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall take at least one of the following actions:

        (1) Isolate the leak.

        (2) Commence repair or replacement of the leaking component.

        (3) Use a leak collection/containment system to prevent the leak until repair or replacement can be made if immediate repair is not possible.

    Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made due to leaks. These records shall be made available to representatives of the TCEQ upon request.

Continuous Demonstration of Compliance

37. The permit holder shall install and operate a fuel flow meter to measure the gas fuel usage for each device listed in Special Condition No. 39. The monitored data shall be reduced to an hourly average flow rate at least once every day, using a minimum of four equally-spaced data points from each one-hour period. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent, and shall be accurate to within 5 percent. In lieu of monitoring fuel flow, the permit holder may monitor stack exhaust flow using the flow monitoring specifications of 40 CFR Part 60, Appendix B, Performance Specification 6 or 40 CFR Part 75, Appendix A.

38. The permit holder shall install and operate an analyzer which continuously monitors the heat content of fuel supplied to each boiler and each thermal oxidizer. For combustion devices which receive fuel from a common fuel gas header, a single analyzer may be installed in the fuel gas

header. During the time the equipment is only firing natural gas, the maximum heat content from the supplier's testing may be used in lieu of continuous monitoring.

39. The permit holder shall install, calibrate, and maintain a continuous emission monitoring system (CEMS) as follows for equipment covered by this permit. Methods specified in Special Condition No. 5.C. may be used as alternatives to installation of an NH_3 CEMS.

EPN	Source Name	CEMS required for pollutant (indicated by X)			
		O_2	CO	NO_X	NH_3
633BLR001	LLDPE Boiler 1	X	X	X	X
633BLR002	LLDPE Boiler 2	X	X	X	X
635BLR001	HDPE Boiler 1	X	X	X	X
635BLR002	HDPE Boiler 2	X	X	X	X
629FLR003	LLDPE Plant Thermal Oxidizer 1	X	X	X	
629FLR004	LLDPE Plant Thermal Oxidizer 2	X	X	X	
636HTR001	HDPE Plant Thermal Oxidizer 1	X	X	X	
636HTR002	HDPE Plant Thermal Oxidizer 2	X	X	X	

40. Each CEMS required under this permit shall satisfy the following requirements.

A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60), Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division for requirements to be met.

B. Subparagraph (1) below applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; section 2 applies to all other sources:

(1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, Section 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Manager, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Manager.

(2) Unless Appendix F is otherwise required by NSPS, state law or regulation, or permit or approval, in lieu of the requirements of 40 CFR Part 60 Appendix F 5.1.1, 5.1.3, and 5.1.4, the permit holder may conduct:

(a) either a Relative Accuracy Audit (RAA) or a Relative Accuracy Test Audit (RATA) once every three (3) years; and

(b) a Cylinder Gas Audit (CGA) each calendar quarter in which the RAA or RATA is not performed.

(3) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on

weekends and plant holidays if instrument technicians are not normally scheduled on those days.

Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of +15 percent accuracy indicate that the CEMS is out of control.

C. The monitoring data shall be reduced to hourly average concentrations at least once every day, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of ppmvd, lb/MMBtu, and/or lb/hr, as applicable at least once every week as follows:

(1) The measured 1-hr average concentration (in units of ppmvd) from the CEMS shall be converted to a dry basis and corrected to the reference oxygen concentration.

(2) The converted concentration, corrected for oxygen, shall be converted to an emissions factor (in units of lb/MMBtu) by using an appropriate F-factor determined as specified in EPA Method 19, Equation 19-13, determined using the measured hydrogen content of the fuel gas.

(3) The emission rate (in units of lb/hr) shall be determined by multiplying the emission factor by the fuel flow rate and fuel heat content measured as required under Special Conditions 37–38.

(4) In case the permit holder elects to monitor stack exhaust flow as provided for in Special Condition 37, the emission rate (in units of lb/hr) shall be determined by multiplying the measured concentration (converted and corrected as needed) by the exhaust flow rate; and the emission factor (in units of lb/MMBtu) shall be determined by dividing the emission rate by the monitored fuel flow rate, using fuel flow rate and fuel heat content data measured as required under Special Conditions 37–38.

D. All monitoring data and quality-assurance data shall be maintained by the source. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.

E. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing.

F. Quality-assured (or valid) data must be generated when the source generating emissions is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the source generating emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Regional Manager.

Initial Demonstration of Compliance

41. The permit holder shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the sources of emissions specified in Paragraph G of this Special Condition, and to demonstrate compliance with Special Condition Nos. 1, 5, and 8. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and the EPA Reference Methods.

    Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60) testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

    A. The appropriate TCEQ Regional Office shall be notified not less than 45 days prior to sampling. The notice shall include:

        (1) Proposed date for pretest meeting.

        (2) Date sampling will occur.

        (3) Name of firm conducting sampling.

        (4) Type of sampling equipment to be used.

        (5) Method or procedure to be used in sampling.

        (6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.

        (7) Procedure/parameters to be used to determine worst case emissions.

        The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

    B. Air contaminants emitted from the facilities to be tested for include (but are not limited to) those specified in paragraph G of this Special Condition.

    C. Sampling shall occur within 60 days after achieving the maximum operating rate, but no later than 180 days after initial start-up of the facilities and at such other times as may be required by the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the appropriate regional office.

    D. The facility being sampled shall operate as indicated in Paragraph H during stack emission testing. These conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, stack sampling shall be performed within 120 days for the following sources if the following requirements are satisfied. This sampling may be waived by the TCEQ Air Section Manager for the Region.

(1) For a boiler or thermal oxidizer, sampling shall be required if the polyethylene production rate exceeds the 3-hr average production rate achieved during the most recent stack test.

(2) For each dryer vent, if the unit produces a grade of resin with a total residual VOC content that exceeds 150% of that determined during the most recent stack test.

E. Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the appropriate TCEQ Regional Office.
One copy to each local air pollution control program.

F. Sampling ports and platform(s) shall be incorporated into the design of each source listed in paragraph G according to the specifications set forth in the attachment entitled "Chapter 2, Guidelines for Stack Sampling Facilities" of the TCEQ Sampling Procedures Manual. Alternate sampling facility designs must be submitted for approval to the TCEQ Regional Director.

G. Sources of emissions subject to stack sampling requirements, and pollutants to be tested, are as follows:

EPN	Source Name	Pollutant (required sampling indicated by X)			
		VOC	CO	NO_X	NH_3
633BLR001	LLDPE Boiler 1		X	X	X
633BLR002	LLDPE Boiler 2		X	X	X
635BLR001	HDPE Boiler 1		X	X	X
635BLR002	HDPE Boiler 2		X	X	X
629FLR003	LLDPE Plant Thermal Oxidizer 1	X	X	X	
629FLR004	LLDPE Plant Thermal Oxidizer 2	X	X	X	
636HTR001	HDPE Plant Thermal Oxidizer 1	X	X	X	
636HTR002	HDPE Plant Thermal Oxidizer 2	X	X	X	
U1-Y-7010	U1 Pellet Dryer Vent	X			
U2-Y-7010	U2 Pellet Dryer Vent	X			
U3-Y-7310	U3 Pellet Dryer Vent	X			
M-407	Pellet Spin Drier Blower Vent	X			

H. Facilities shall operate as follows during sampling:

(1) For the boilers, sampling shall occur at the maximum heat duty that can be reasonably achieved during sampling.

(2) For the thermal oxidizers, sampling shall occur at the maximum polyethylene plant production.

(3) For each pellet dryer vent, sampling shall occur during production of a resin expected to have the maximum total residual VOC content, at the maximum achievable production rate for the unit. A sample of the resin being produced during the stack test

shall be collected and analyzed using the methods referred to in Special Condition No. 14.C.

42. The permit holder shall perform stack sampling and other testing on as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the fabric filter vents listed in Special Condition No. 18 to demonstrate compliance with the Special Condition No. 1. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and EPA Reference Methods. Within 90 days after to the start of operation, the applicant shall submit an alteration to identify the representative vents that will be used to establish the actual pattern and quantities of air contaminants that will be emitted from an identified group of similar vents.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60) testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

A. The appropriate TCEQ Regional Office shall be notified not less than 45 days prior to sampling. The notice shall include:

(1) Proposed date for pretest meeting.

(2) Date sampling will occur.

(3) Name of firm conducting sampling.

(4) Type of sampling equipment to be used.

(5) Method or procedure to be used in sampling.

(6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.

(7) Procedure/parameters to be used to determine worst case emissions

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

B. Air contaminants emitted from the vents to be tested for include (but are not limited to) PM, PM_{10}, $PM_{2.5}$. EPA Reference Methods 5, 201, and 202A shall be used to determine emissions of PM, PM_{10} and $PM_{2.5}$. The testing shall have a method detection limit no higher than that used as the basis for the emission rates of $PM_{2.5}$ from the vents.

C. Sampling shall occur within 60 days after achieving the maximum achievable operating rate, but no later than 180 days after initial start-up of the facilities and at such other times as may be required by the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the appropriate regional office.

D. The facility being sampled shall operate at maximum achievable operating rates and air flow rates through the vents during stack emission testing. The conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits

may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

E. Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the appropriate TCEQ Regional Office.
One copy to each local air pollution control program.

F. Sampling ports and platform(s) shall be incorporated into the design of (source stack and EPN) according to the specifications set forth in the attachment entitled "Chapter 2, Guidelines for Stack Sampling Facilities" of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual. Alternate sampling facility designs must be submitted for approval to the TCEQ Regional Director.

Maintenance, Startup, and Shutdown

43. This permit authorizes the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit. Additionally, this permit authorizes emissions from the following temporary facilities used to support planned MSS activities at permanent site facilities: frac tanks, containers, vacuum trucks, and portable control devices identified in Special Condition Nos. 49, 50, and 52 and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in this Attachment, and (c) does not operate as a replacement for an existing authorized facility.

Attachment A identifies the inherently low emitting MSS activities that may be performed at the plant. Emissions from activities identified in Attachment A shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment A must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

Routine maintenance activities, as identified in Attachment B may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment B shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

The performance of each planned MSS activity not identified in Attachments A or B and the emissions associated with it shall be recorded and include at least the following information:

A. the process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;

B. the type of planned MSS activity and the reason for the planned activity;

C. the common name and the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;

D. the date and time of the MSS activity and its duration;

E. the estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis.

44. Process units and facilities, with the exception of those identified in Special Conditions 46, 47, 49, and Attachment A shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.

A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with paragraph C of this special condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC partial pressure is greater than 0.50 psi at either the normal process temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.

C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel or closed liquid recovery system unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.

D. If the VOC partial pressure is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

(1) For MSS activities identified in Attachment B, the following option may be used in lieu of (2) below. The facilities being prepared for maintenance shall not be vented directly

to atmosphere until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) per the site safety procedures.

(2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (process flow diagrams [PFDs] or piping and instrumentation diagrams [P&IDs] may be used to demonstrate compliance with the requirement). If the process equipment is purged with a gas, two system volumes of purge gas must have passed through the control device or controlled recovery system before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of Special Condition No. 45. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. If there is not a connection (such as a sample, vent, or drain valve) available from which a representative sample may be obtained, a sample may be taken upon entry into the system after degassing has been completed. The sample shall be taken from inside the vessel so as to minimize any air or dilution from the entry point. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. Documented site procedures used to de-inventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above.

E. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

(1) It is not technically practicable to depressurize or degas, as applicable, into the process.

(2) There is not an available connection to a plant control system (flare).

(3) There is no more than 50 lb of air contaminant to be vented to atmosphere during shutdown or startup, as applicable.

All instances of venting directly to atmosphere provided for under paragraph E of this Special Condition shall be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in Attachment B.

45. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR 60, Appendix A) with the following exceptions:

(1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor (RF) of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate (RF) shall be recorded. If the RF of the VOC (or mixture of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

VOC Concentration = Concentration as read from the instrument*RF

In no case should a calibration gas be used such that the RF of the VOC (or mixture of VOCs) to be monitored is greater than 5.0.

(2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least 5 minutes, recording VOC concentration each minute. As an alternative the VOC concentration may be monitored over a five-minute period with an instrument designed to continuously measure concentration and record the highest concentration read. The highest measured VOC concentration shall be recorded and shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

(1) The air contaminant concentration measured as defined in (3) is less than 80 percent of the range of the tube and is at least 20 percent of the maximum range of the tube.

(2) The tube is used in accordance with the manufacturer's guidelines.

(3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000*mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

(1) The detector shall be calibrated within 30 days of use with a certified pentane gas standard at 25% of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.

(2) A functionality test shall be performed on each detector within 24 hours of use with a certified gas standard at 25% of the LEL for pentane. The LEL monitor shall read no lower than 90% of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.

(3) A certified methane gas standard equivalent to 25% of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95% of that for pentane.

46. This permit authorizes emissions from EPNs TKMSS and TEMPCTRL for the storage tanks identified in Special Condition No. 19 during planned floating roof landings. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated in the MAERT. The following requirements apply to tank roof landings.

A. At all times that the roof is resting on its leg supports, the tank emissions shall be controlled by a closed vent system and control device meeting the following specifications:

(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).

(2) The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when the vapor space is directed to the control device. The vapor recovery system collection rate shall be no less than 100 cubic feet per minute when the tank is idle or the tank is being drained, and two times the fill rate when the tank is being refilled.

(3) The control device shall be operated as required by Special Condition No. 52.A or 52.B.

The roof shall be landed on its lowest legs unless entry or inspection is planned.

The requirements of this paragraph do not apply to uncontrolled degassing and/or ventilation conducted pursuant to paragraphs B–E of this Special Condition.

B. The control requirements of Paragraph A of this Special Condition may be waived during emptying and set-up for tank degassing if the following conditions are met:

(1) The tank will be completely emptied for the purposes of inspection and maintenance or change of service.

(2) The process of emptying the tank when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as practicable.

(3) Degassing of the vapor space under the landed roof begins within 24 hours after the tank has been emptied.

C. After the tank has been completely emptied, the tank shall not be opened except as necessary to set up for degassing and cleaning. Floating roof tanks with liquid capacities less than 100,000 gallons may be degassed without control if the VOC partial pressure of the standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under the landed roof shall be completed as follows:

(1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 1,200 ppmv. The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.

(2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.

(3) A volume of purge gas equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery

system, before the vent stream may be sampled to verify acceptable VOC concentration. The measurement of purge gas volume shall not include any make-up air introduced into the control device or recovery system. The VOC sampling and analysis shall be performed as specified in Special Condition No. 45.A or 45.B.

(4) The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged.

(5) Degassing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC partial pressure of the remaining liquid in the tank is less than 0.15 psia.

D. The tank shall not be opened or ventilated without control, except as allowed below until one of the criteria in paragraph D of this condition is satisfied.

(1) Minimize air circulation in the tank vapor space.

(a) One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. Other manways or access points may be opened as necessary to remove or de-volatilize the remaining liquid. Wind barriers shall be installed at all open manways and access points to minimize air flow through the tank.

(b) Access points shall be closed when not in use.

(2) Minimize time and VOC partial pressure. (this option may be used only if justified by the applicant)

(a) The VOC partial pressure of the liquid remaining in the tank shall not exceed 0.044 psia as documented by the method specified in subparagraph D(1) of this condition;

(b) Blowers may be used to move air through the tank without emission control at a rate not to exceed 1000 cfm for no more than 72 hours. All standing liquid shall be removed from the tank during this period; and

(c) Records shall be maintained of the blower circulation rate, the duration of uncontrolled ventilation, and the date and time all standing liquid was removed from the tank.

E. The tank may be opened without restriction and ventilated without control after all standing liquid has been removed from the tank or the liquid remaining in the tank has a VOC partial pressure of less than 0.02 psia. These criteria shall be demonstrated in one of the following ways:

(1) Low VOC partial pressure liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC partial pressure of the liquid mixture remaining in the tank to less than 0.02 psia. This liquid shall be added during tank degassing if practicable. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC partial pressure may be estimated based on this information and engineering calculations.

(2) If water is added or sprayed into the tank to remove standing VOC, one of the following must be demonstrated:

(a) Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR 435 Subpart A Appendix 1.

(b) Take a representative sample of the liquid remaining in the tank and verify that the hexane soluble VOC concentration is less than 1000 ppmw using EPA method 1664.

(c) Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify that the VOC concentration is less than 1000 ppmw through the procedure in Special Condition No. 45.A or 45.B.

(3) No standing liquid, verified through visual inspection.

(4) Once the VOC vapor pressure of the liquid remaining in the tank is verified to be less than 0.02 psia in accordance with the procedures in paragraph (1) above, any additional water flushes do not require additional vapor pressure verification.

The permit holder shall maintain records to document the method used to release the tank.

F. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12 month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information (as applicable):

(1) The identification of the tank and emission point number, and any control devices or controlled recovery systems used to reduce emissions;

(2) The reason for the tank roof landing;

(3) For the purpose of estimating emissions, the date, time, and other information specified for each of the following events:

(a) The roof was initially landed;

(b) All liquid was pumped from the tank to the extent practicable;

(c) Start and completion of controlled degassing, and total volumetric flow;

(d) All standing liquid was removed from the tank or any transfers of low VOC partial pressure liquid to or from the tank including volumes and vapor pressures to reduce tank liquid VOC partial pressure to < 0.02 psia.

(e) If there is liquid in the tank, VOC partial pressure of liquid, start and completion of uncontrolled degassing, and total volumetric flow;

(f) Refilling commenced, liquid filling the tank, and the volume necessary to float the roof; and

(g) Tank roof off supporting legs, floating on liquid.

(4) The estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events (c) and (g) with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 “Compilation of Air Pollution Emission Factors, Chapter 7—Storage of Organic Liquids” dated November 2006 (or later edition) and the permit application.

47. Fixed roof storage tanks are subject to the requirements of Special Condition No. 46.C. and 46.D. If the ventilation of the vapor space is controlled, the emission control system shall meet the

requirements of Special Condition No. 46.B.(1) through 46.B.(4). Records shall be maintained per Special Condition No. 46.E.(3)c through 46.E.(3)e, and 46.E.(4).

48. Operations associated with EPN TEMPCTRL shall not exceed 192 hours per year.

49. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site:

A. Prior to initial use, identify any liquid in the truck. Record the liquid level and document the VOC partial pressure. After each liquid transfer, identify the liquid, the volume transferred, and its VOC partial pressure.

B. If vacuum pumps or blowers are operated when liquid is in or being transferred to the truck, the following requirements apply:

(1) If the VOC partial pressure of the liquid in or being transferred to the truck is greater than 0.50 psi at 95°F, the vacuum/blower exhaust shall be routed to a control device or a controlled recovery system.

(2) Equip fill line intake with a “duckbill” or equivalent attachment if the hose end cannot be submerged in the liquid being collected.

(3) A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.

(a) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a “duckbill” or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.

(b) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and at least every hour during each transfer shall be recorded, measured using an instrument meeting the requirements of Special Condition No. 45.A or 45.B.

C. Record the volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.

D. The permit holder shall determine the vacuum truck emissions each month using the daily vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12 month vacuum truck emissions shall also be determined on a monthly basis.

E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in Special Condition Nos. 49.A through 49.D do not apply.

50. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.

A. The exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum effective May 1, 2013. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled, sampled, gauged, or when removing material.

B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.

C. These requirements do not apply to vessels storing less than 450 gallons of liquid that are closed such that the vessel does not vent to atmosphere except when filling, sampling, gauging, or when removing material.

D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. This record must be updated by the last day of the month following. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC partial pressure at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled “Technical Guidance Package for Chemical Sources - Loading Operations” and standing emissions determined using: the TCEQ publication titled “Technical Guidance Package for Chemical Sources - Storage Tanks.”

E. If the tank/vessel is used to store liquid with VOC partial pressure less than 0.10 psi at 95°F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application.

51. Additional occurrences of MSS activities authorized by this permit may be authorized under permit by rule only if conducted in compliance with this permit’s procedures, emission controls, monitoring, and recordkeeping requirements applicable to the activity.

52. Control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device.

Controlled recovery systems identified in this permit shall be directed to an operating process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

A. Carbon Adsorption System (CAS).

(1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.

(2) The CAS shall be sampled downstream of the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC.

(3) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 45.A or 45.B.

(4) Breakthrough is defined as the highest measured VOC concentration at or exceeding 100 ppmv above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within

four hours. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.

(5) Records of CAS monitoring shall include the following:

(a) Sample time and date.

(b) Monitoring results (ppmv).

(c) Canister replacement log.

(6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.

B. Thermal Oxidizer.

(1) The thermal oxidizer firebox exit temperature shall be maintained at not less than 1400°F and waste gas flows shall be limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the oxidizer.

(2) The thermal oxidizer exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency.

The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5ºC.

C. The flares (EPNs 629FLR001, 629FLR002, 636FLR001, and 636FLR002), shall be operated as required in Special Condition No. 6.

53. Transfer of solid materials, including catalyst, to or from process equipment shall be conducted consistent with the following requirements:

A. Particulate emissions shall be minimized as follows during loading of solids into process equipment:

(1) Equipment for loading solids shall be designed and configured such that solids are dropped from a height not to exceed 2 feet; or

(2) A vacuum or vacuum truck shall be used to convey solids, where the vacuum/vacuum truck exhaust is controlled using a HEPA filter or portable dust collector.

B. Particulate emissions shall be minimized as follows during unloading of solids from process equipment using one of the following methods:

(1) Process equipment shall be flooded with water prior to transfer of solids;

(2) Solids shall be transferred to a bin or container which minimize the action of wind currents on dust formation; or

(3) If a portable vacuum or vacuum truck is used to remove solids, the system shall be enclosed such that the only vent to the atmosphere is through the vacuum/vacuum

truck exhaust, and such exhaust shall be controlled using a HEPA filter or portable dust collector.

C. The permit holder shall record the type of solids transferred, the method of transfer, and the type of control device employed (if any).

Greenhouse Gas Emissions

54. Permit holders must keep records sufficient to demonstrate compliance with 30 Texas Administrative Code § 116.164. If construction, a physical change or a change in method of operation results in Prevention of Significant Deterioration (PSD) review for criteria pollutants, records shall be sufficient to demonstrate the amount of emissions of Greenhouse Gas (GHG) from the source as a result of construction, a physical change or a change in method of operation does not require authorization under 30 TAC §116.164(a). If there is construction, a physical change or change in the method of operation that will result in a net emission increase of 75,000 tpy or more CO_{2e} and PSD review is triggered for criteria pollutants, greenhouse gas emissions are subject to PSD review.

55. Monitoring, quality assurance/quality control requirements, emission calculation methodologies, record keeping, and reporting requirements related to GHG emissions shall adhere to the applicable requirements in 40 CFR Part 98 and in this permit.

56. Permittee shall calculate the CO_{2e} emissions on a 12-month rolling basis, based on the procedures and Global Warming Potentials (GWP) contained in Greenhouse Gas Regulations, 40 CFR Part 98, Subpart A, Table A-1.

57. Records of emissions of GHG, and how they were determined, in compliance with Special Condition Nos. 54, 55, and 56 must be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction.

Recordkeeping

58. The records required by these special conditions shall be maintained in either hard copy or electronic format and shall be maintained for at least five years rather than the two-year period specified in General Condition No. 7. These records shall be made immediately available at the request of personnel from the TCEQ or any air pollution control agency with jurisdiction.

Permit 156571, PSDTX1564, and GHGPSDTX195

Attachment A

Inherently Low Emitting Activities

Activity	Emissions			
	VOC	NO_x	CO	PM
Reactor sampling	X			
Low point drains	X			
Management of sludge from pits, ponds, sumps, and water conveyances	X			
Aerosol Cans and other consumables	X			
Inspection, repair, replacement, adjustment, testing, maintenance, and calibration of analytical equipment	X			
Carbon canister inspection, repair, and replacement	X			
Instrumentation/analyzer maintenance, inspection, repair, replacement, adjustment, testing	X			
Meter proving	X			
Inspection, repair, and replacement of filters and screens	X			

Date: TBD

Permit 156571, PSDTX1564, and GHGPSDTX195

Attachment B

Routine Maintenance Activities (Volume purged <50 cubic feet)

Pump inspection, repair/replacement

Fugitive component (valve, pipe, flange) inspection, repair/replacement

Compressor inspection, repair/replacement

Heat exchanger inspection, repair/replacement

Vessel inspection, repair/replacement

Transfer of solid catalyst and desiccant to/from process equipment

Instrument/analyzer maintenance

Date: TBD

Permit 156571, PSDTX1564, and GHGPSDTX195

Attachment C

MSS Activity Summary

Facilities	Emissions Activity	EPN
All process units	Process startup and shutdown	629FLR001 629FLR002 636FLR001 636FLR002
All process units	Process unit purge/degas/drain	UNITSD 629FLR001 629FLR002 636FLR001 636FLR002
Floating roof storage tank	Operate tank with landed roof, controlled degassing	TKMSS TEMPCTRL
All storage tanks	Ventilation, cleaning and inspection	TKMSS TEMPCTRL TKNH3MC TKNH3MUC 636FLR001 636FLR002 636HTR001
Vacuum trucks	Operate vacuum truck	VACTRUCK
Frac tanks	Operate frac tank	FRACTK
All process units	Transfer of solid catalyst	SOLIDSMSS
Routine maintenance activities	See Attachment B	ROUMSS 629FLR001 629FLR002 636FLR001 636FLR002
Inherently low emitting activities	See Attachment A	ILEMSS

Date: TBD

Emission Sources - Maximum Allowable Emission Rates

Permit Number 156571 and PSDTX1564

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
633BLR001	LLDPE Boiler 1	VOC	1.87	8.20
		NO_X	5.21	-
		NO_X (MSS)	7.29	-
		NO_X Annual Cap	-	15.20
		CO	25.64	56.15
		SO_2	4.86	21.26
		PM	2.59	11.32
		PM_{10}	2.59	11.32
		$PM_{2.5}$	2.59	11.32
		H_2SO_4	0.15	0.65
		NH_3	1.56	6.82
633BLR002	LLDPE Boiler 2	VOC	1.87	8.20
		NO_X	5.21	-
		NO_X (MSS)	7.29	-
		NO_X Annual Cap	-	15.20
		CO	25.64	56.15
		SO_2	4.86	21.26
		PM	2.59	11.32
		PM_{10}	2.59	11.32
		$PM_{2.5}$	2.59	11.32
		H_2SO_4	0.15	0.65
		NH_3	1.56	6.82
635BLR001	HDPE Boiler 1	VOC	1.19	5.20
		NO_X	3.30	-

Emission Sources - Maximum Allowable Emission Rates

		NO_X (MSS)	4.62	-
		NOX Annual Cap	-	9.64
		CO	16.25	35.60
		SO_2	3.08	13.48
		PM	1.64	7.18
		PM_{10}	1.64	7.18
		$PM_{2.5}$	1.64	7.18
		H_2SO_4	0.09	0.41
		NH_3	0.99	4.32
635BLR002	HDPE Boiler 2	VOC	1.19	5.20
		NO_X	3.30	-
		NO_X (MSS)	4.62	-
		NOX Annual Cap	-	9.64
		CO	16.25	35.60
		SO_2	3.08	13.48
		PM	1.64	7.18
		PM_{10}	1.64	7.18
		$PM_{2.5}$	1.64	7.18
		H_2SO_4	0.09	0.41
		NH_3	0.99	4.32
633CTW001X	LLDPE Polymer Cooling Tower	VOC	96.08	42.08
		PM	1.44	6.31
		PM_{10}	1.12	4.90
		$PM_{2.5}$	<0.01	0.02
634CTW001	HDPE Polymer Cooling Tower	VOC	28.02	12.27
		PM	0.42	1.84
		PM_{10}	0.33	1.43
		$PM_{2.5}$	<0.01	<0.01
LOADING	Oligomer and Low Polymer TT/RC Loading	VOC	3.64	0.26

Emission Sources - Maximum Allowable Emission Rates

XXBH001X	XXBH001X Bag House	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
XXBH002X	Loading Station #1 Bag House	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
XXBH003X	XXBH003X Bag House	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
HOPLOAD1	LLDPE Hopper Car Loading Filter Vent	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
XXWS011L	LLDPE Truck Trans Loading Filter Vent 1	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
XXWS012L	LLDPE Truck Trans Loading Filter Vent 2	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
XXWS013	LLDPE Truck Trans Loading Filter Vent 3	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
XXWS014		VOC	(6)	(6)

Emission Sources - Maximum Allowable Emission Rates

	LLDPE Truck Trans Loading Filter Vent 4	PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
XXBH006	LLDPE Truck Loadout Silo Vent 1	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
XXBH007	LLDPE Truck Loadout Silo Vent 2	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
XXBH008	LLDPE Truck Loadout Silo Vent 3	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
XXBH009	LLDPE Truck Loadout Silo Vent 4	VOC	(6)	(6)
		PM	(6)	(6)
		PM_{10}	(6)	(6)
		$PM_{2.5}$	(6)	(6)
OSBLVNT1	LLDPE OSBL PE Vents CAP	VOC	(7)	(7)
		PM	3.17	8.90
		PM_{10}	3.17	8.90
		$PM_{2.5}$	0.25	0.71
XXBH004X	XXBH004X Bag House	VOC	(8)	(8)
		PM	(8)	(8)
		PM_{10}	(8)	(8)
		$PM_{2.5}$	(8)	(8)
XXBH005X	XXBH005X Bag House	VOC	(8)	(8)
		PM	(8)	(8)

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	(8)	(8)
		$PM_{2.5}$	(8)	(8)
HOPLOAD2	HDPE Hopper Car Loading Filter Vent	VOC	(8)	(8)
		PM	(8)	(8)
		PM_{10}	(8)	(8)
		$PM_{2.5}$	(8)	(8)
XXWS011H	HDPE Truck Trans Loading Filter Vent 1	VOC	(8)	(8)
		PM	(8)	(8)
		PM_{10}	(8)	(8)
		$PM_{2.5}$	(8)	(8)
XXWS012H	HDPE Truck Trans Loading Filter Vent 2	VOC	(8)	(8)
		PM	(8)	(8)
		PM_{10}	(8)	(8)
		$PM_{2.5}$	(8)	(8)
OSBLVNT2	HDPE OSBL PE Vents CAP	VOC	(9)	(9)
		PM	0.56	2.44
		PM_{10}	0.56	2.44
		$PM_{2.5}$	0.04	0.19
OSBLFUG1	LLDPE OSBL Fugitives (5)	VOC	1.48	6.49
		NH_3	0.03	0.12
OSBLFUG2	HDPE OSBL Fugitives (5)	VOC	1.48	6.49
		NH_3	0.03	0.12
633TK007	1-Hexene Feed Tank	VOC	0.30	0.82
TK-DIESEL1	Diesel Tank	VOC	0.10	< 0.01
TK-DIESEL2	Diesel Tank	VOC	0.10	< 0.01
TK-DIESEL3	Diesel Tank	VOC	0.10	< 0.01
TK-DIESEL4	Diesel Tank	VOC	0.10	< 0.01
TK-DIESEL5	Diesel Tank	VOC	0.10	< 0.01
TK-DIESEL6	Diesel Tank	VOC	0.10	< 0.01

Emission Sources - Maximum Allowable Emission Rates

NH3SBR1	Aqueous Ammonia Tank	NH_3	< 0.01	< 0.01
NH3SBR2	Aqueous Ammonia Tank	NH_3	< 0.01	< 0.01
TKNH3MC	Aqueous Ammonia Tank MSS Controlled	NH_3	1.46	< 0.01
TKNH3MUC	Aqueous Ammonia Tank MSS Uncontrolled	NH_3	0.32	0.02
629FLR001	LLDPE HP Elevated Flare (Routine)	VOC	504.96	(10)
		NO_X	58.78	(10)
		CO	302.80	(10)
		SO_2	6.72	(10)
629FLR001	LLDPE HP Elevated Flare (MSS)	VOC	1,267.87	(10)
		NO_X	116.67	(10)
		CO	601.02	(10)
		SO_2	11.18	(10)
629FLR001	LLDPE HP Elevated Flare (Shakedown)	VOC	(11)	(11)
		NO_X	(11)	(11)
		CO	(11)	(11)
		SO_2	(11)	(11)
629FLR002	LLDPE LP Elevated Flare (Routine)	VOC	504.96	(10)
		NO_X	58.78	(10)
		CO	302.80	(10)
		SO_2	6.72	(10)
629FLR002	LLDPE LP Elevated Flare (MSS)	VOC	1,267.87	(10)
		NO_X	116.67	(10)
		CO	601.02	(10)
		SO_2	11.18	(10)
629FLR002	LLDPE LP Elevated Flare (Shakedown)	VOC	(11)	(11)
		NO_X	(11)	(11)
		CO	(11)	(11)
		SO_2	(11)	(11)

Emission Sources - Maximum Allowable Emission Rates

629FLRCAP	LLDPE HP/LP Elevated Flare (Routine and MSS)	VOC	-	243.81
		NO_X	-	27.42
		CO	-	141.28
		SO_2	-	3.19
629FLRCAP	LLDPE HP/LP Elevated Flare (Shakedown)	VOC	-	450.87
		NO_X	-	50.03
		CO	-	257.71
		SO_2	-	5.75
636FLR001	HDPE HP Elevated Flare (Routine)	VOC	516.78	(12)
		NO_X	57.64	(12)
		CO	296.94	(12)
		SO_2	6.26	(12)
636FLR001	HDPE HP Elevated Flare (MSS)	VOC	1,143.19	(12)
		NO_X	109.59	(12)
		CO	564.53	(12)
		SO_2	9.96	(12)
636FLR001	HDPE HP Elevated Flare (Shakedown)	VOC	(13)	(13)
		NO_X	(13)	(13)
		CO	(13)	(13)
		SO_2	(13)	(13)
636FLR002	HDPE LP Elevated Flare (Routine)	VOC	516.78	(12)
		NO_X	57.64	(12)
		CO	296.94	(12)
		SO_2	6.26	(12)
636FLR002	HDPE LP Elevated Flare (MSS)	VOC	1,143.19	(12)
		NO_X	109.59	(12)
		CO	564.53	(12)
		SO_2	9.96	(12)
636FLR002		VOC	(13)	(13)

Emission Sources - Maximum Allowable Emission Rates

	HDPE LP Elevated Flare (Shakedown)	NO_X	(13)	(13)
		CO	(13)	(13)
		SO_2	(13)	(13)
636FLRCAP	HDPE HP/LP Elevated Flare (Routine and MSS)	VOC	-	249.47
		NO_X	-	19.47
		CO	-	100.28
		SO_2	-	1.46
636FLRCAP	HDPE HP/LP Elevated Flare (Shakedown)	VOC	-	461.35
		NO_X	-	35.31
		CO	-	181.88
		SO_2	-	2.55
Z-491	Stabilizer Mixer Dust Collector	VOC	(14)	(14)
		PM	(14)	(14)
		PM_{10}	(14)	(14)
		$PM_{2.5}$	(14)	(14)
M-407	Pellet Spin Drier Blower Vent	VOC	(14)	(14)
		PM	(14)	(14)
		PM_{10}	(14)	(14)
		$PM_{2.5}$	(14)	(14)
C-411	Stabilizer Transfer Blower A through G	VOC	(14)	(14)
		PM	(14)	(14)
		PM_{10}	(14)	(14)
		$PM_{2.5}$	(14)	(14)
629FIL9005	Elutriator	VOC	(14)	(14)
		PM	(14)	(14)
		PM_{10}	(14)	(14)
		$PM_{2.5}$	(14)	(14)
629FIL9006	Elutriator	VOC	(14)	(14)
		PM	(14)	(14)

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	(14)	(14)
		$PM_{2.5}$	(14)	(14)
629FIL9007	Elutriator	VOC	(14)	(14)
		PM	(14)	(14)
		PM_{10}	(14)	(14)
		$PM_{2.5}$	(14)	(14)
629S9001	Blending Silo	VOC	(14)	(14)
		PM	(14)	(14)
		PM_{10}	(14)	(14)
		$PM_{2.5}$	(14)	(14)
629S9002	Blending Silo	VOC	(14)	(14)
		PM	(14)	(14)
		PM_{10}	(14)	(14)
		$PM_{2.5}$	(14)	(14)
629S9003	Blending Silo	VOC	(14)	(14)
		PM	(14)	(14)
		PM_{10}	(14)	(14)
		$PM_{2.5}$	(14)	(14)
629S9004	Blending Silo	VOC	(14)	(14)
		PM	(14)	(14)
		PM_{10}	(14)	(14)
		$PM_{2.5}$	(14)	(14)
HDPEVNT	HDPE Vents CAP	VOC	11.02	44.09
		PM	3.76	7.54
		PM_{10}	3.76	7.54
		$PM_{2.5}$	0.30	0.60
HDPEFUG	HDPE Fugitives (5)	VOC	3.29	14.41
629FLR003	LLDPE Plant Thermal Oxidizer #1	VOC	(15)	(15)
		NO_X	(15)	(15)

Emission Sources - Maximum Allowable Emission Rates

		CO	(15)	(15)
		SO_2	(15)	(15)
		PM	(15)	(15)
		PM_{10}	(15)	(15)
		$PM_{2.5}$	(15)	(15)
629FLR004	LLDPE Plant Thermal Oxidizer #2	VOC	(15)	(15)
		NO_X	(15)	(15)
		CO	(15)	(15)
		SO_2	(15)	(15)
		PM	(15)	(15)
		PM_{10}	(15)	(15)
		$PM_{2.5}$	(15)	(15)
629TOCAP	LLDPE Thermal Oxidizer CAP	VOC	64.39	103.42
		NO_X	12.08	52.04
		CO	25.49	54.91
		SO_2	5.37	23.16
		PM	2.57	11.08
		PM_{10}	2.57	11.08
		$PM_{2.5}$	2.57	11.08
636HTR001	HDPE Plant Thermal Oxidizer #1	VOC	(16)	(16)
		NO_X	(16)	(16)
		CO	(16)	(16)
		SO_2	(16)	(16)
		PM	(16)	(16)
		PM_{10}	(16)	(16)
		$PM_{2.5}$	(16)	(16)
636HTR002	HDPE Plant Thermal Oxidizer #2	VOC	(16)	(16)
		NO_X	(16)	(16)
		CO	(16)	(16)

Emission Sources - Maximum Allowable Emission Rates

		SO_2	(16)	(16)
		PM	(16)	(16)
		PM_{10}	(16)	(16)
		$PM_{2.5}$	(16)	(16)
636TOCAP	HDPE Thermal Oxidizer CAP	VOC	11.85	44.82
		NO_X	9.05	38.77
		CO	19.09	40.90
		SO_2	4.03	17.25
		PM	1.93	8.25
		PM_{10}	1.93	8.25
		$PM_{2.5}$	1.93	8.25
U1-Y-7010	U1 Pellet Dryer Vent	VOC	(17)	(17)
		PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U1-Y-6231	U1 Bag Station Dump Hopper Vent 1	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U1-Y-6232	U1 Bag Station Dump Hopper Vent 2	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U1-Y-6233	U1 Bag Station Dump Hopper Vent 3	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U1-Y-6234	U1 Bag Station Dump Hopper Vent 4	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U1-Y-6235	U1 Bag Station Dump Hopper Vent 5	PM	(17)	(17)
		PM_{10}	(17)	(17)

Emission Sources - Maximum Allowable Emission Rates

		$PM_{2.5}$	(17)	(17)
U1-Y-6251	U1 Talc Surge Bin Filter Vent	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U1-Y-6260	U1 Mixer Vent Filter Vent	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U1-C-4040	U1 Catalyst Vent Filter	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U2-Y-7010	U2 Pellet Dryer Vent	VOC	(17)	(17)
		PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U2-Y-6286	U2 Additive Surge Bin Filter Vent 1	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U2-Y-6287	U2 Additive Surge Bin Filter Vent 2	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U2-Y-6288	U2 Additive Surge Bin Filter Vent 3	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U2-Y-6289	U2 Additive Surge Bin Filter Vent 4	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U2-Y-6290	U2 Additive Surge Bin Filter Vent 5	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)

Emission Sources - Maximum Allowable Emission Rates

U2-Y-6251	U2 Talc Surge Bin Filter Vent	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U2-Y-6260	U2 Mixer Vent Filter Vent	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U2-Y-4901	U2 Catalyst Vent Filter	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U3-Y-7310	U3 Pellet Dryer Vent	VOC	(17)	(17)
		PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U3-Y-6586	U3 Additive Surge Bin Filter Vent 1	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U3-Y-6587	U3 Additive Surge Bin Filter Vent 2	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U3-Y-6588	U3 Additive Surge Bin Filter Vent 3	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U3-Y-6589	U3 Additive Surge Bin Filter Vent 4	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U3-Y-6590	U3 Additive Surge Bin Filter Vent 5	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U3-Y-6551	U3 Talc Surge Bin Filter Vent	PM	(17)	(17)

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U3-Y-6560	U3 Mixer Vent Filter Vent	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
U3-Y-4902	U3 Catalyst Vent Filter	PM	(17)	(17)
		PM_{10}	(17)	(17)
		$PM_{2.5}$	(17)	(17)
LLDPEVNT	LLDPE Vents CAP	VOC	27.04	107.47
		PM	3.45	2.81
		PM_{10}	3.45	2.81
		$PM_{2.5}$	0.28	0.22
LLDPEFUG	LLDPE Fugitives (5)	VOC	9.62	42.12
GEN1	Emergency Generator 1	VOC	0.84	0.04
		NO_X	2.96	0.15
		CO	15.44	0.77
		SO_2	0.03	<0.01
		PM	0.13	<0.01
		PM_{10}	0.13	<0.01
		$PM_{2.5}$	0.13	<0.01
GEN2	Emergency Generator 2	VOC	0.84	0.04
		NO_X	2.96	0.15
		CO	15.44	0.77
		SO_2	0.03	<0.01
		PM	0.13	<0.01
		PM_{10}	0.13	<0.01
		$PM_{2.5}$	0.13	<0.01
GEN3	Emergency Generator 3	VOC	0.84	0.04
		NO_X	2.96	0.15

Emission Sources - Maximum Allowable Emission Rates

		CO	15.44	0.77
		SO_2	0.03	<0.01
		PM	0.13	<0.01
		PM_{10}	0.13	<0.01
		$PM_{2.5}$	0.13	<0.01
GEN4	Emergency Generator 4	VOC	0.84	0.04
		NO_X	2.96	0.15
		CO	15.44	0.77
		SO_2	0.03	<0.01
		PM	0.13	<0.01
		PM_{10}	0.13	<0.01
		$PM_{2.5}$	0.13	<0.01
FWP1	Firewater Pump 1	VOC	16.85	0.84
		NO_X	16.85	0.84
		CO	9.21	0.46
		SO_2	0.02	<0.01
		PM	0.53	0.03
		PM_{10}	0.53	0.03
		$PM_{2.5}$	0.53	0.03
FWP2	Firewater Pump 2	VOC	16.85	0.84
		NO_X	16.85	0.84
		CO	9.21	0.46
		SO_2	0.02	<0.01
		PM	0.53	0.03
		PM_{10}	0.53	0.03
		$PM_{2.5}$	0.53	0.03
TEMPCTRL	MSS Temporary Devices	VOC	2.19	0.01
		NO_X	1.96	0.19
		CO	1.65	0.16

Emission Sources - Maximum Allowable Emission Rates

		SO_2	0.28	0.03
		PM	0.15	0.01
		PM_{10}	0.15	0.01
		$PM_{2.5}$	0.15	0.01
TKMSS	Tank MSS	VOC	16.13	1.55
UNITSD	Shutdown Equipment Clearing	VOC	589.72	2.77
ROUMSS	Routine Equipment Clearing	VOC	162.87	1.31
VACTRUCK	Vacuum Truck MSS	VOC	0.01	<0.01
SOLIDSMSS	Solids Handling MSS	PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
		$PM_{2.5}$	<0.01	<0.01
ILEMSS	Inherently Low Emitting Activities	VOC	7.33	1.60
FRACTK	Frac Tank MSS	VOC	0.01	0.07
637WSAC001	Wet Surface Air Cooler	PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
		$PM_{2.5}$	<0.01	<0.01
WWTP	Wastewater Treatment Plant	VOC	0.37	1.62

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
H_2SO_4 - sulfuric acid mist
NH_3 - ammonia
(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
(6) Included in LLDPE OSBL PE Vents cap (EPN OSBLVNT1)
(7) VOC emission rates included in LLDPE OSBL Vents included in EPN LLDPEVENT
(8) Included in HDPE OSBL PE Vents cap (EPN OSBLVNT2)
(9) VOC emission rates included in HDPE OSBL Vents included in EPN HDPEVENT
(10) Included in flare cap (EPN 629FLRCAP)
(11) Included in flare cap (EPN 629FLRCAP). Hourly shakedown emissions are included in the routine-MSS scenario.

Emission Sources - Maximum Allowable Emission Rates

(12)Included in flare cap (EPN 636FLRCAP
(13)Included in flare cap (EPN 636FLRCAP). Hourly shakedown emissions are included in the routine-MSS scenario.
(14)Included in HDPE PE Vents cap (EPN HDPEVNT)
(15)Included in thermal oxidizer cap (EPN 629TOCAP)
(16)Included in thermal oxidizer cap (EPN 636TOCAP)
(17)Included in LLDPE PE Vents cap (EPN LLDPEVNT)

Date: TBD

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX195

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for all sources of GHG air contaminants on the applicant's property that are authorized by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities authorized by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates
			TPY (4)
633BLR001	LLDPE Boiler 1	CO_2 (5)	192,885.72
		CH_4 (5)	10.05
		N_2O (5)	2.01
		CO_2e	193,736.27
633BLR002	LLDPE Boiler 2	CO_2 (5)	192,885.72
		CH_4 (5)	10.05
		N_2O (5)	2.01
		CO_2e	193,736.27
635BLR001	HDPE Boiler 1	CO_2 (5)	122,290.66
		CH_4 (5)	6.37
		N_2O (5)	1.27
		CO_2e	122,829.91
635BLR001	HDPE Boiler 2	CO_2 (5)	122,290.66
		CH_4 (5)	6.37
		N_2O (5)	1.27
		CO_2e	122,829.91
629FLRCAP	LLDPE HP/LP Elevated Flare Routine and MSS	CO_2 (5)	46,228.53
		CH_4 (5)	28.64
		N_2O (5)	0.46
		CO_2e	47,082.27
636FLRCAP	HDPE HP/LP Elevated Flare Routine and MSS	CO_2 (5)	68,005.22
		CH_4 (5)	42.13
		N_2O (5)	0.68
		CO_2e	69,261.12
629TOCAP	Thermal Oxidizer CAP	CO_2 (5)	199,836.33
		CH_4 (5)	10.16

Emission Sources - Maximum Allowable Emission Rates

		N_2O (5)	2.03
		CO_2e	200,695.96
636TOCAP	HDPE Thermal Oxidizer CAP	CO_2 (5)	144,027.13
		CH_4 (5)	7.32
		N_2O (5)	1.46
		CO_2e	144,646.69
OSBLFUG1 OSBLFUG2 HDPEFUG LLDPEFUG	Fugitives	CH_4 (5)	0.63
		CO_2e	15.81
GEN1 GEN2 GEN3 GEN4 FWP1 FWP2	Emergency Generator and Firewater Pump CAP	CO_2 (5)	334.15
		CH_4 (5)	0.01
		N_2O (5)	<0.01
		CO_2e	335.30
TEMPCTRL	Tank MSS Cap	CO_2 (5)	124.89
		CH_4 (5)	<0.01
		N_2O (5)	<0.01
		CO_2e	125.43

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) CO_2 - carbon dioxide
N_2O - nitrous oxide
CH_4 - methane
HFCs - hydrofluorocarbons
PFCs - perfluorocarbons
SF_6 - sulfur hexafluoride
CO_2e - carbon dioxide equivalents based on the following Global Warming Potentials (1/2015): CO_2 (1), N_2O (298), CH_4(25), SF_6 (22,800), HFC (various), PFC (various)
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. These rates include emissions from maintenance, startup, and shutdown.
(5) Emission rate is given for informational purposes only and does not constitute enforceable limit.

Date: TBD