SPECIAL CONDITIONS

Permit Number 34401

EMISSION STANDARDS

1. This permit authorizes emissions only from those points listed in the attached table entitled AEmission Sources - Maximum Allowable Emission Rates,@ and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating requirements specified in the special conditions. **(04/08)**

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 maximum allowable emission rates table (MAERT). 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. **(6/04)**

3. A. This permit authorizes emissions from the Flare (Emission Point No. [EPN] 6a) for the following routine maintenance, start-up, and shutdown activities: **(6/04)**

   Purging of the following vessels for maintenance: **(6/04)**

   Hydrogenation Reactors R-1104, R-1105, R-1106, R-1204, and R-1205 **(6/04)**
   Stripper Decanters V-1119 and V-1219 **(6/04)**
   Low Boiler Cut Column Decanter V-3107 **(6/04)**
   High Boiler Cut Decanter V-3108 **(6/04)**
   Dewatering Column Decanter V-3109 **(6/04)**
   Pure Cyclohexane Vessel V-3110 **(6/04)**
   Isoprene Feed Vessel V-3116 **(6/04)**
   Butadiene Feed Vessel V-3117 **(6/04)**
   Butadiene/Isoprene Feed Vessel V-3118 **(6/04)**
   Styrene Feed Vessel V-3119 **(6/04)**

   B. This permit authorizes emissions from various locations (EPN FUG-MAINT) for the following routine maintenance, start-up, and shutdown activities: **(6/04)**

V-8102 open top manway to inspect **(6/04)**
X-7101 open sump, check, clean out **(6/04)**
X-7150 open sump, check, clean out **(6/04)**
X-7154 open sump, check, clean out **(6/04)**
Z-3103 change out alumina bed **(6/04)**
H-1107 hydroblast **(6/04)**
H-1108 hydroblast **(6/04)**
CM filter change **(6/04)**
Cyclohexane loss from CM drum **(6/04)**
Pump Cyclohexane from drums into V-4108 **(6/04)**
Loss of VOC from hoses used for maintenance activities **(6/04)**
Sine pumps P-1112-1 and -2 scrapper gate changes **(6/04)**

C. These emissions are subject to the maximum allowable emission rates indicated on the MAERT. Any maintenance, start-up, and shutdown activities not in the above lists are not authorized by this permit. **(6/04)**

FEDERAL PROGRAM COMPLIANCE

4. 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 for Volatile Organic Liquid Storage Vessels in Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60), Subparts A and Kb. **(6/04)**

OPERATIONAL LIMITS AND REQUIREMENTS

5. Annual Septon® production for each production line shall not exceed the quantities represented in Section 7.0 of the confidential section of the permit amendment application dated December 2003. **(6/04)**

6. A. The vents from Crumb Dewatering Screen V-2101, Rotary Dryer Cyclones Z-2110 and Z-2115, Wastewater Sumps X-

7101, X-7150, and X-7151 shall be routed to the Regenerative Thermal Oxidizer (RTO) (EPN 3a). **(6/04)**

B. The RTO (EPN 3a) shall operate with no less than 98 percent efficiency in disposing of the carbon compounds captured by the collection system when the inlet concentration of VOC routed to the RTO is 100 parts per million by volume (ppmv) or greater. **(6/04)**

C. The RTO (EPN 3a) shall not exceed a maximum outlet concentration of 2 ppmv when the concentration of VOC routed to the RTO is less than 100 ppmv.

7. Fuel gas used for RTO and flare shall be natural gas containing no more than 5 grain of total sulfur per 100 dry standard cubic feet. **(4/08)**

8. The flare (EPN 6) 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 under normal, upset, and maintenance flow conditions.

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. **(01/09)**

9. The flare (EPN 6) 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 or an infrared 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. **(01/09)**

10. 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 air to assist the flare. **(01/09)**

11. A. Loading of cyclohexane bottoms into tank trucks shall be vapor-balanced to a storage tank which is vented to the flare. **(6/04)**

    B. Loading of cyclohexane bottoms into tank trucks shall not exceed the maximum pumping rate of 8,100 gallons per hour and an annual rate of 243,070 gallons per year. **(6/04)**

    C. All tank trucks loaded with cyclohexane bottoms at this facility shall pass leak-tight testing a minimum of once each year in accordance with the procedures described in the EPA regulations in 40 CFR Part 60, Subparts A and XX on Standards of Performance for New Stationary Sources promulgated for Bulk Gasoline Terminals. **(6/04)**

12. The Filtered Vents (EPN 1) covered by this permit shall not operate unless filters and associated equipment are maintained in good working order and operating during normal facility operations. The following steps shall be performed, at a minimum, to ensure proper operation of each filtered vent: **(4/08)**

    A. All filter vents shall be inspected for visible emissions once each day. **(4/98)**

    B. When there are visible emissions from any one filtered vent, the operation associated with that particular filtered vent shall be isolated and shut down in a timely and orderly manner. The isolated filter system shall be tested and inspected. Failed or damaged parts shall be repaired or replaced. **(4/98)**

    C. Spare filters shall be maintained at the site for this facility. **(6/04)**

13. Piping, Valves, Connectors, Pumps, Agitators, and Compressors in VOC Service-Intensive Directed Maintenance - 28LAER **(6/04)**

Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

A. With the exception of paragraph N, these conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pound per square inch, absolute at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 pound per square inch) below ambient pressure. Equipment excluded from this condition shall be identified in a list to be made available upon request.

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

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

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. Non-accessible valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made available upon request.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested

at no less than normal operating pressure and adjustments 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. In addition, all connectors shall be monitored by leak-checking for fugitive emissions at least annually using an approved gas analyzer with a directed maintenance program.
Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Non-accessible valves shall be monitored by leak-checking for fugitive emissions at least annually using an approved gas analyzer with a directed maintenance program. 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. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in 40 CFR § 60.485(a)-(b).

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained. Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

G. All new and replacement pumps and compressors shall be equipped with a shaft sealing system that prevents or

detects emissions of VOC from the seal. These seal systems need not be monitored and 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.

All other pump, compressor, and agitator seals emitting VOC shall be monitored with an approved gas analyzer at least quarterly.

H. Damaged or leaking valves, connectors, agitator seals, compressor seals, and pump seals found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. At the discretion of the Texas Commission on Environmental Quality (TCEQ) Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.

I. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or designated representative upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.

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

K. In lieu of the monitoring frequency specified in paragraph F, valves in gas and light liquid service may be monitored on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Valves in gas and light liquid service may be monitored on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of valves 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.

L. The percent of valves leaking used in paragraph K shall be determined using the following formula:

$$(Vl + Vs) \times 100/Vt = Vp$$

Where:

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

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

Vt = the total number of valves in the facility subject to the monitoring requirements, as of the

last day of the monitoring period, not including nonaccessible and unsafe-to-monitor valves.

Vp = the percentage of leaking valves for the monitoring period.

M. Alternative connector monitoring frequency schedules of 40 CFR Part 63, Subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks, may be used in lieu of the annual connector instrument monitoring required by paragraph E of this permit condition.

N. Any component found to be leaking by physical inspection (i.e., sight, sound, or smell) shall be repaired or monitored with an approved gas analyzer within 15 days to determine whether the component is leaking in excess of 500 ppmv of VOC. If the component is found to be leaking in excess of 500 ppmv of VOC, it shall be subject to the repair and replacement requirements contained in this special condition.

INITIAL DEMONSTRATION OF COMPLIANCE

14. The holder of this permit 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 Regenerative Thermal Oxidizer (EPN 3a). **(4/08)**

The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at their expense. **(4/98)**

A. The TCEQ Houston Regional Office shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting. **(4/98)**

The notice shall include:

(1) 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. **(4/98)**

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 submitting the test reports. **(4/98)**

A written proposed description of any deviation from sampling procedures specified in permit conditions or the TCEQ or the EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Houston Regional Director or the TCEQ Compliance Support Division in Austin shall approve or disapprove of any deviation from specified sampling procedures. **(4/98)**

Requests to waive testing for any pollutant specified in B of this condition shall be submitted to the TCEQ Office of Permitting, Remediation, and Registration, Air Permits Division in Austin. Test waivers and alternate or equivalent procedure proposals for NSPS testing which must have the EPA approval shall be submitted to the TCEQ Compliance Support Division in Austin. **(4/98)**

B. Air contaminants emitted from the RTO (EPN 3a) to be tested for include (but are not limited to) cyclohexane, butadiene, isoprene, styrene, PM, and particulate matter less than 10 microns in diameter. **(6/04)**

C. Sampling shall occur within 60 days after full operational start-up of the facilities and at such other times as may be required by the Executive Director of the TCEQ. Requests for additional time to perform sampling shall be submitted to the TCEQ Houston Regional Office. Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires the EPA approval, and requests shall be submitted to the TCEQ Compliance Support Division in Austin. **(6/04)**

(1) Initial testing of EPN 3a shall occur within 60 days after full production on Line 1 is achieved. **(4/08)**

(2) Re-testing of EPN 3a shall occur within 60 days after full production of Line 2 is achieved. **(4/08)**

D. The plant shall operate at maximum production rates during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. If the plant is unable to operate at maximum rates during testing, then future production rates may be limited to the rates established during testing. Additional stack testing may be required when higher production rates are achieved. **(4/98)**

E. Copies of the final sampling report shall be forwarded to the TCEQ within 30 days after sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the TCEQ Houston Regional Office.
One copy to the Harris County Pollution Control Department.
One copy to the TCEQ Compliance Support Division in Austin. **(4/98)**

ADDITIONAL RECORDKEEPING AND REPORTING REQUIREMENTS

15. A. Facility records shall include the following:

(1) Monthly records of annual Septon® production based on a 12-month rolling total of the previous 12 months. Records shall include the date and total Septon® production for the previous 12 months in units of pounds per year. **(4/98)**

(2) Monthly records of annual cyclohexane bottoms loading based on a 12-month rolling total of the previous 12 months. Records shall include the date and total cyclohexane bottoms loaded for the previous 12 months in units of gallons per year. **(6/04)**

B. Facility records shall be maintained for a period of two years after the data is obtained and shall be made available to representatives of the TCEQ, the EPA, or any local air pollution control program upon request. **(6/04)**

MISCELLANEOUS

16. No later than 60 days prior to the commencement of construction on Line 2, the permit holder shall confirm with the TCEQ Air Permits Division that compliance with Special Condition No. 6 regarding the RTO and Special Condition No. 13 regarding 28 LAER continue to constitute best available control technology (BACT) for Line 2. The permit holder may not commence construction on Line 2 unless BACT applicable at that time will be used. **(6/04)**

HAZARDOUS AIR POLLUTANTS

17. A. Emissions of Hazardous Air Pollutants (HAPs) as defined in 40 CFR Part 63 from the site shall not exceed 10 tons

per year (tpy) of any individual HAP nor 25 tpy of any combination of HAPs. **(6/04)**

B. Monthly records of each individual HAP and total of all HAPs shall be kept. The annual limits for any individual HAP and total HAPs from the site shall be the sum of the rolling previous 12 months in units of TPY. **(6/04)**

Dated January 20, 2009