



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

January 9, 2014

MS CAROL TJIONG  
VICE PRESIDENT  
PLAINVIEW BIOENERGY LLC  
5005 LBJ FWY STE 1400  
DALLAS TX 75244-6178

Re: Permit Alteration  
Permit Number: 78440  
Fuel Grade Ethanol Production Facility  
Plainview, Hale County  
Regulated Entity Number: RN101983278  
Customer Reference Number: CN603145491  
Account Number: HA-0179-P

Dear Ms. Tjiong:

This is in response to your letter received September 12, 2013, requesting alteration of the conditions of the above-referenced permit. We understand that you wish to 1) alter Special Condition 25 so that the Regenerative Thermal Oxidizer (RTO) ceramic bed can be physically inspected annually instead of monthly, and 2) add new language to Special Conditions 24 and 25 that requires the company to take corrective action if the monitored firebox temperature falls below the temperature achieved during the latest stack test or the natural gas usage of the RTO exceeds 10 MMBtu/hr.

Per Title 30 Texas Administrative Code § 116.116(c) [30 TAC § 116.116(c)] and based on our review, Permit Number 78440 is altered. Enclosed are the altered special conditions and new permit face to replace those currently attached to your permit. Please attach these to your permit.

Your cooperation in this matter is appreciated. If you need further information or have any questions, please contact Mr. Tom Lawshae at (512) 239-2048 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Ms. Carol Tjiong  
Page 2  
January 9, 2014

Re: Permit Number: 78440

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality.

Sincerely,

A handwritten signature in cursive script, appearing to read "Michael Wilson".

Michael Wilson, P.E., Director  
Air Permits Division  
Office of Air  
Texas Commission on Environmental Quality

MPW/tl

Enclosure

cc: Air Section Manager, Region 2 - Lubbock

Project Number: 198450



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
AIR QUALITY PERMIT



*A Permit Is Hereby Issued To*  
**Plainview BioEnergy, LLC**  
*Authorizing the Construction and Operation of*  
**Fuel Grade Ethanol Production Facility**  
*Located at Plainview, Hale County, Texas*  
Latitude 34° 10' 40" Longitude -101° 37' 36"

Permit: 78440

Revision Date : January 9, 2014

Renewal Date: October 11, 2016

  
For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code 116.116 (30 TAC 116.116)]
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC 116.120(a), (b) and (c)]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC 116.115(b)(2)(B)(iii)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC 116.115(b)(2)(C)]

6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction; comply with any additional recordkeeping requirements specified in special conditions attached to the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC 116.115(b)(2)(E)]
8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC 116.115(b)(2)(F)]
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification for upsets and maintenance in accordance with 30 TAC 101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in Texas Health and Safety Code (THSC) 382.003(3) or violate THSC 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit.

SPECIAL CONDITIONS

Permit Number 78440

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission 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 conditions specified in this permit.
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 one 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 one weight percent are not consistent with good practice for minimizing emissions.

Operational Limitations

3. Emission rates are based on and the facilities are limited to the following:

Source Name	Maximum Hourly Throughput	Annual Throughput (12-Month Rolling)
Denatured Ethanol Production	13,700 gallons	120,000,000 gallons
Grain Receiving	420 tons	1,200,000 tons
Dryer (DDGS* Throughput)	44.44 tons	175,996 tons <b>(11/12)</b>
Denatured Ethanol Loading (Truck)	36,000 gallons	120,000,000 gallons (combined for rail and truck annual loading)
Denatured Ethanol Loading (Rail)	300,000 gallons	
DDGS* Loadout	420 tons	175,996 tons <b>(11/12)</b>
WDGS** Loadout	250 tons	997,471 tons
MWDGS*** Loadout	250 tons	428,000 tons
Emergency Truck Dump	250 tons	112,000 tons

- \* Dried Distillers Grain and Solubles
- \*\* Wet Distillers Grain and Solubles
- \*\*\* Modified Wet Distillers Grain and Solubles

Facility may produce any combination of animals feed co-product including DDGS, MWDGS, and WDGS as long as emissions do not exceed the emission limitations provided in the MAERT. The maximum amount of the combination products shipped from the facility shall not exceed 997,471 tons. Throughputs shall be tracked on a 12-month rolling basis

No changes shall be made to the above limitations without prior approval by the Texas Commission on Environmental Quality (TCEQ). **(04/11)**

4. As represented in the permit application, the following shall occur:
  - A. Four fabric filter baghouses, Unloading Baghouse, Emission Point No. (EPN) S20, Hammermill Baghouse, EPN S30, DDGS Cooler Baghouse, EPN S70, and the DDGS Loading Baghouse, EPN S90, properly installed and in good working order, shall control particulate matter emissions from the Unloading, the Grain Milling area, the DDGS Cooler and Handling areas, and the DDGS Loadout area, with no less than 99 percent control efficiency or achieve an exhaust concentration of no more than 0.01 grains/dscf.
  - B. The DDGS Loadout Area shall be covered by an enclosure that may remain open on two sides only while loading DDGS in railcars or trucks.
  - C. All loadout devices (augers, drop spouts, etc.) shall be equipped with drop socks at the drop points to minimize particulate fugitive emissions from grain loadout areas.
  - D. Spillage of any raw products, finished products, or waste products shall be picked up and lawfully managed on a daily basis. **(04/11)**
5. The holder of this permit shall not create a nuisance as defined in Title 30 Texas Administrative Code § 101.4 (30 TAC § 101.4). If it is determined by Executive Director of the TCEQ that the current procedures and/or controls are not effective in controlling odors, additional measures shall be implemented.
6. All vents from the fermenters and the beer well shall be directed to the Fermentation Scrubber, EPN S40, which shall be a once through type (scrubbing liquid is not recirculated) and shall operate with no less than 99 percent removal

SPECIAL CONDITIONS

Permit Number 78440

Page 3

~~efficiency on an hourly average in the removal of VOCs from these vents.~~  
(06/11)

- A. The minimum liquid flow to the absorber shall be 60 gpm prior to the first stack test performed in accordance with Special Condition No. 20. After the first satisfactory stack test, the flow shall be at least equal to that maintained during last satisfactory stack test. The circulation rate shall be monitored and recorded at least once an hour.
- B. The flow 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 two percent of span or five percent of the design value.
- C. Quality assured (or valid) data must be generated when the scrubber 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 scrubber operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

7. ~~The Ethanol Loadout Flare, EPN S50 shall be used to control the emissions from the loading of ethanol with a control efficiency of no less than 98 percent. The Biomethanator Flare, EPN S60, shall be used to control the emissions from the biomethanator system with a control efficiency of no less than 98 percent when the dryers are not operating. Both flares 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 Title 40 Code of Federal Regulations § 60.18 (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 TCEQ Regional Office to demonstrate compliance with these requirements.

- B. The flares 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

- C. The flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours.
  - D. Fuel gas for the flare pilots combusted at this facility shall be sweet natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet. **(04/11)**
8. During the final design and construction of the ethanol plant and prior to the actual start of operation, the permit holder shall submit to the TCEQ for review and approval additional design information and representations that shall demonstrate, through engineering estimates and vendor guarantees, the ability of the proposed Ethanol Loadout Flare, EPN S50, to control the proposed vapor flow from rail and truck loading at maximum hourly throughput. The information to be provided shall include but is not limited to a completed Table 8, Flare Systems. Any required changes in representations and emission rates for the flare shall be added to the special conditions and MAERT of the permit through a permit amendment or alteration as appropriate. **(04/11)**
9. Storage of VOC:

Tank Service is limited to storing the following liquids:

Tank	Service	Rolling 12 Month Throughput (gallons)
T1	190 Proof Ethanol	128MM
T2	200 Proof Ethanol	120MM
T3	Denaturant	6MM
T4/T5	Denatured Ethanol	120MM (combined)
T6	Corrosion Inhibitor	20,000

- A. Storage tanks are subject to the following requirements: The control requirements specified in paragraphs B-E of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.5 pounds per square inch, absolute (psia) at the maximum expected

SPECIAL CONDITIONS

Permit Number 78440

Page 5

operating temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons

- B. An internal floating deck or "roof" or equivalent control shall be installed in all tanks. 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 internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.
- C. An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal, and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.
- D. For any tank equipped with a floating roof, the holder of this permit shall follow perform the visual inspections and seal gap measurements as specified in Title 40 Code of Federal Regulations 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 seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.
- E. The floating roof design shall incorporate sufficient flotation to conform to the requirements of American Petroleum Institute (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.
- F. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum. Storage tanks must be equipped with permanent submerged fill pipes.
- G. The permit holder shall maintain a monthly emissions record which includes calculated emissions of VOC from all storage tanks during the previous calendar month and the past consecutive 12 month period. The

record shall include tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, and VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures.

Emissions for tanks shall be calculated using: the TCEQ publication titled "Technical Guidance Package Sources - Storage Tanks." **(04/11)**

10. Throughput records for each storage tank (if throughput is specified in SC. 9) may be maintained in lieu of records required in Special Condition No. 9G. **(04/11)**

11. Loading of Ethanol

A. Loading operations are limited to denatured ethanol at the rates indicated.

Liquid	Gallons per Hour	Gallons Rolling 12-months
Denatured Ethanol (Truck)	36,000	120,000,000
Denatured Ethanol (Rail)	300,000	120,000,000

All loading shall be submerged and rolling 12-month rack throughput records shall be updated on a monthly basis.

B. 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.

C. Loading emissions shall be vented to the Ethanol Loadout Flare, EPN S50.

D. Each tank truck shall pass vapor-tight testing every 12 months using the methods described in 40 CFR Part 60, Subpart XX. The permit holder shall not allow a tank truck to be filled unless it has passed a leak-tight test

SPECIAL CONDITIONS

Permit Number 78440

Page 7

within the past year as evidenced by a certificate which shows the date the tank truck last passed the leak-tight test required by this condition and the identification number of the tank truck. **(04/11)**

12. The natural gas-fired boilers, B-1 and B-2, (EPNs S110A and S110B) shall meet the following emission limitations and operational requirements:
- A. Nitrogen oxides (NO<sub>x</sub>): 0.02 lb/MMBtu (hourly), high heating value (HHV), or alternatively 18 ppmv (hourly) dry corrected to 3 percent O<sub>2</sub>. This NO<sub>x</sub> performance standard is based on an hourly averaging period and shall only apply at greater than 30 percent firing rate. When operating at or below 30 percent of design firing rate, the boilers shall continue to comply with the NO<sub>x</sub> emission limits in pounds per hour (lbs/hr) specified in the MAERT.
  - B. The NO<sub>x</sub>: 0.015 lb/MMBtu (annual) or 13.5 ppmv (annual) dry corrected to 3 percent O<sub>2</sub>. This NO<sub>x</sub> performance standard is based on an annual averaging period and shall only apply at greater than 30 percent firing rate. When operating at or below 30 percent of design firing rate, the boilers shall continue to comply with the NO<sub>x</sub> emission limits in lbs/hr specified in the MAERT. **(11/12)**
  - C. Carbon monoxide (CO): 0.05 lb/MMBtu, HHV, or alternatively, 68 ppmv, dry corrected to 3 percent O<sub>2</sub>.
  - D. The boilers, B-1 and B-2 shall be fired with natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet (dscf). The natural gas shall be sampled every 6 months to determine total sulfur and net heating value. Test results from the fuel supplier may be used to satisfy this requirement.
  - E. The permit holder shall install and operate totalizing fuel flow meter to measure the gas fuel usage for each boiler and fuel usage for each shall be recorded monthly. 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 five percent.

SPECIAL CONDITIONS

Permit Number 78440

Page 8

F. Quality assured (or valid) data must be generated when the boilers are operating. 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 five percent of the time (in minutes) that the boilers operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. **(11/08)**

13. Opacity of emissions from the boilers must not exceed five percent averaged over a six-minute period except for those periods described in Rule 111.111.(a)(1)(E) of 30 TAC Chapter 111.

14. Piping, Valves, Connectors, Pumps, and Compressors - 28VHP

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 Volatile organic Compound (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 available upon request.

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

- (1) piping and instrumentation diagrams (PID);
- (2) a written or electronic database or electronic file;
- (3) color coding;
- (4) a form of weatherproof identification; or
- (5) 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.

SPECIAL CONDITIONS

Permit Number 78440

Page 9

- 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 subparagraph 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 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

SPECIAL CONDITIONS

Permit Number 78440

Page 10

- (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 at the end of 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 20 ppmv above background and must be repaired within 24 hours or a cap, blind valve, plug, or second valve must be installed on the line and 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. 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.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed weekly 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.

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 are 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 VOCs to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOCs to be measured.

SPECIAL CONDITIONS

Permit Number 78440

Page 11

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 and compressor 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 an 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 and compressor 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. Records of the first attempt to repair 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 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 instruction in 30 TAC

SPECIAL CONDITIONS

Permit Number 78440

Page 12

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 shutdown 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 may require early unit shutdown 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 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 F through G 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. **(04/11)**

15. Quarterly Connector Monitoring

- A. In addition to the weekly physical inspection required by Item E of Special Condition No. 14, all accessible connectors in gas\ vapor and light liquid service shall be monitored quarterly with an approved gas analyzer in accordance with Items F through J of Special Condition No. 14.

SPECIAL CONDITIONS

Permit Number 78440

Page 13

- B. In lieu of the monitoring frequency specified in paragraph A, connectors may be monitored on a semiannual basis if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Connectors may be monitored on an annual basis if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

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.

- C. The percent of connectors leaking used in paragraph B shall be determined using the following formula:

$$(Cl + Cs) \times 100 / Ct = Cp$$

Where:

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

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

Ct = 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.

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

16. During the final design and construction of the ethanol plant and prior to the actual start of operation, the permit holder shall submit to the TCEQ for review and approval additional design information and representations that shall

SPECIAL CONDITIONS

Permit Number 78440

Page 14

provide an updated fugitive component count. This information will be accompanied by an alteration or amendment request depending on whether fugitive allowables will need to be reduced or increased.

17. A Regenerative Thermal Oxidizer (RTO), EPN S10 shall be used to control the VOC and particulate emissions from the yeast tanks, slurry tanks, 190 proof condenser, 200 proof condenser, and the DDGS dryers, Facility Identification Numbers D-1 and D-2.
  - A. The RTO 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 of no less than 98 percent. The RTO shall limit dryer particulate emissions to no more than 0.015 grains per dry standard cubic foot (gr/dscf)
  - B. The RTO firebox exit temperature shall be maintained at not less than 1550°F and exhaust oxygen concentration not less than 3 percent 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 and six-minute average oxygen concentration shall be maintained at or greater than the respective hourly average maintained during the most recent satisfactory stack testing required by Special Condition No. 20.
  - C. The RTO fire box 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 six 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  $\pm 0.75$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 2.5^{\circ}\text{C}$ .
  - D. Quality assured (or valid) data must be generated when the RTO 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 RTO operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. (04/11)

18. The Emergency Fire Water Pump, EPN S100, shall be limited to burning low sulfur diesel fuel and shall not be operated more than 300 hours annually.
19. All in-plant roads, truck loading and unloading areas, parking areas, and other traffic areas shall be sprinkled with water, and/or be treated with effective dust suppressant(s), and/or be paved (with a cohesive hard surface) and cleaned as necessary to maintain compliance with all TCEQ rules and regulations.

#### Initial Demonstration of Compliance

20. 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 Boiler No. 1 and Boiler No. 2, (EPNs S110A and S110B) the Fermentation Scrubber, EPN S40, and the RTO, EPN S10 to demonstrate compliance with the MAERT, and to demonstrate NESHAPS compliance for hazardous air pollutants. 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 in accordance with the appropriate U.S. Environmental Protection Agency (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 40 CFR Part 60 testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

- A. The TCEQ Lubbock 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.

The notice shall include:

- (1) Proposed date for pretest meeting.

SPECIAL CONDITIONS

Permit Number 78440

Page 16

- (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 used to determine Boiler and RTO loads during and after the sampling period.

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 RTOs to be tested for include (but are not limited to) VOC, HAPs, CO, PM, and NO<sub>x</sub>. Air contaminants emitted from the Boilers to be tested for include (but are not limited to) CO, and NO<sub>x</sub>. Air contaminants emitted from the Fermentation Scrubbers to be tested for include (but are not limited to) VOC and HAPs.
- C. Sampling shall occur within 60 days after reaching full hourly production rate, but not 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 regional office.
- D. The plant shall operate at maximum production rates during stack emission testing. For the purposes of testing the RTO and scrubbers the maximum production rate is considered to be an hourly ethanol production rate of 12,557 gallons. The RTO shall be tested at the minimum firebox exit temperature represented (1550°F). The scrubber shall be tested at the minimum water flowrate required to meet emission

SPECIAL CONDITIONS

Permit Number 78440

Page 17

limits, to be determined during compliance testing. The boilers are to be tested at the maximum fuel flowrate. These conditions/parameters and any other primary operating parameters that affect the emission rates 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, if the hourly ethanol production rate is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the region.

- 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 the each stack for Boiler No. 1 and Boiler No 2, (EPNs S110A and S110B), scrubber, EPN S40 and RTO, EPN S10 according to the specifications set forth in the attachment entitled "Chapter 2, Stack Sampling Facilities" of the TCEQ Sampling Procedures Manual. Alternate sampling facility designs must be submitted for approval to the TCEQ Regional Manager.  
**(04/11)**

Continuous Demonstration of Compliance

21. The Natural Gas-Fired Boilers B-1 and B-2 (EPN's S110A and S110B) are limited to a maximum fuel input of 120 MMBtu/hr per boiler. Records of fuel

SPECIAL CONDITIONS

Permit Number 78440

Page 18

consumption will be kept to demonstrate compliance with this condition. Demonstration of compliance with this condition will also demonstrate compliance with the emission limits of Special Condition No. 12.

22. The permit holder shall install, calibrate, and maintain a CEMS to measure and record the in-stack concentration of NO<sub>x</sub> and O<sub>2</sub> from the Boilers B-1 and B-2 (EPNs S110A and S110B). A single CEMS may be shared by the two boilers if the CEMS passes the relative accuracy test audit for each boiler when operated in shared mode. **(11/08)**
  - 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, 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. Section 1 below applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; § 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, § 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.
    - (2) 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.

SPECIAL CONDITIONS

Permit Number 78440

Page 19

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, § 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 one-hour 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 the permit allowable emission rate in lbs/hr at least once every day and cumulative tons per year on a 12-month rolling average at least once every month.
- 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 boilers 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 facility generating emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement 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 Director.

SPECIAL CONDITIONS

Permit Number 78440

Page 20

23. The natural gas-fire dryers, FINs D-1 and D-2, are each limited to a maximum fuel input of 45 MMBtu/hr. Records of fuel consumption will be kept to demonstrate compliance with this condition.
24. The RTO firebox temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer as described in Special Condition No. 17C. If the temperature falls below the temperature achieved during the most recent stack test, the permit holder shall take corrective action, which shall consist of one or more of the following actions:
  - A. Inspecting the RTO to ensure it has not shut off;
  - B. Inspecting the gas/fuel supply to ensure that no reduction in flow rate has occurred;
  - C. Verifying that the temperature gauge on the DCS is reading the same as the local gauge on the RTO;
  - D. Inspecting/calibrating the temperature gauges to ensure they are operating properly; and
  - E. Increasing the temperature set point and contacting the manufacturer to come out to the facility to inspect/repair the RTO. **(01/14)**
25. The condition of the RTO ceramic fill shall be physically inspected monthly or during annual plant maintenance shutdown to insure that the ceramic has not settled, become plugged or degraded. **(01/14)**

The permit holder shall continuously monitor and record the natural gas usage of the RTO. If the actual natural gas usage exceeds 10 MMBtu/hr, the permit holder shall take corrective action, which shall consist of one or more of the following actions:

- A. Inspecting/calibrating the fuel usage meters to ensure correct reading;
- B. Inspecting the RTO to determine the cause of the increase in fuel usage; and

SPECIAL CONDITIONS

Permit Number 78440

Page 21

- C. Contacting the manufacturer to come out to the facility to inspect/repair the RTO. **(01/14)**
26. During the final design and construction of the ethanol plant, the permit holder shall submit to the TCEQ for review and approval additional design information and representations that shall demonstrate, through engineering estimates and vendor guarantees, that the pressures on the gas side of all of the heat exchangers are lower than the pressures on the water side of the heat exchangers and that in the event of a heat exchanger failure, VOC emissions would not enter the cooling tower water and be emitted to the atmosphere.

This demonstration may consist of actual pressure measurements taken during plant operation. If pressure measurements are taken, they shall be taken according to the time frame listed in Special Condition No. 19C.

27. The minimum liquid flow to the scrubbers shall be maintained at the value specified in Special Condition No. 6A. The minimum scrubbing water flow rate shall be monitored and recorded at least once an hour while the scrubbers are operating.

---

Federal Applicability

28. These facilities shall comply with all requirements of EPA regulations on Standards of Performance for New Stationary Sources promulgated for Volatile Organic Liquid Storage Vessels and Equipment Leaks of VOC's in the Synthetic Organic Chemicals Manufacturing Industry in 40 CFR Part 60, Subparts A, Kb, and VV.
29. The Natural Gas Fired Boiler(s), identified as EPNs S110A and S110B, will comply with all applicable requirements of EPA regulations on Standards of Performance for New Stationary Sources promulgated for Small Industrial-Commercial-Institutional Steam Generating Units in 40 CFR Part 60, Subparts A and Db. **(11/08)**

Recordkeeping Requirements

30. Records of annual throughputs shall be maintained at this facility and made available at the request of personnel from the TCEQ or any other air pollution control program having jurisdiction to demonstrate compliance with Special Condition No. 3. These records shall be totaled for each calendar month, retained for a rolling 24-month period, and include the following along with the records required for the scrubber and RTO:
- A. Denatured ethanol output (gallons);
  - B. DDGS Loaded (tons);
  - C. WDGS Loaded (tons);
  - D. MWDGS Loaded (tons);
  - E. Fuel consumption of each boiler and dryer recorded in cubic feet of natural gas and bio-gas;
  - F. Hours of operation for each baghouse;
  - G. Scrubber water flowrates;
  - H. Results of monthly RTO ceramic fill inspection;
  - I. RTO firebox temperatures;
  - J. Records of diesel emergency fire water pump operating hours;
  - K. NO<sub>x</sub> and O<sub>2</sub> CEMS readings for Boiler Nos. 1 and 2;
  - L. Number of tons of corn transported by dump truck; and
  - M. Throughput for each liquid storage tank. **(11/08)**
31. Site-wide allowable emissions of HAPs (hazardous air pollutants) shall be less than 10 tpy for any one HAP and less than 25 tpy for all HAPs. Compliance with these limits shall be demonstrated by meeting the permit representations.

Maintenance, Startup, and Shutdown (MSS)

32. This permit authorizes the emissions from the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

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.

SPECIAL CONDITIONS

Permit Number 78440

Page 24

All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis. **(08/11)**

33. Process units and facilities, with the exception of pumps, distillation columns, and fermentation vessels and those identified in Special Condition 35 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 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 ii 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 34. 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 per Special Condition 33.E must 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. **(08/11)**

34. 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)

SPECIAL CONDITIONS

Permit Number 78440

Page 27

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

- (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. The highest measured VOC concentration 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 is less than 80 percent of the range of the tube. If the maximum range of the tube is greater than the release concentration defined in (3), the concentration measured 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.

SPECIAL CONDITIONS

Permit Number 78440

Page 28

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 monthly 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 daily functionality test shall be performed on each detector using 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.  
**(08/11)**

35. Tank roofs may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application. Emissions from change of service tank landings, for which the tank is not cleaned and degassed, shall not exceed 10 tons of VOC in any rolling 12 month period. 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 on the MAERT. The following requirements apply to tank roof landings.

A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to two hours if necessary to allow for valve lineups and pump changes necessary to drain the tank.

This requirement does not apply where the vapor under a floating roof is routed to control or a controlled recovery system during this process.

- B. If the VOC partial pressure of the liquid previously stored in the tank is greater than 0.50 psi at 95°F, tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained unless the vapor under the floating roof is routed to control or a controlled recovery system during this period. 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 landed roofs 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 a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. 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 34.

SPECIAL CONDITIONS

Permit Number 78440

Page 30

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

Minimize air circulation in the tank vapor space.

- (1) 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.
  - (2) Access points shall be closed when not in use
- D. 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 less than 0.02 psia. These criteria shall be demonstrated in any 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.

SPECIAL CONDITIONS

Permit Number 78440

Page 31

- (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 hexane soluble VOC concentration is less than 1000 ppmw using EPA method 1664 (may also use 8260B or 5030 with 8015 from SW-846).
  - c. Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1000 ppmv through the procedure in Special Condition 34.
- (3) No standing liquid verified through visual inspection.

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

- E. Tanks shall be refilled as rapidly as practicable until the roof is off its legs with the following exception:

The vapor space below the tank roof is directed to a control device when the tank is refilled until the roof is floating on the liquid. The control device used and the method and locations used to connect the control device shall be recorded. All vents from the tank being filled must exit through the control device.
- 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:
  - (1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;

SPECIAL CONDITIONS

Permit Number 78440

Page 32

- (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 practical,
    - 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 psi,
    - 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 and the permit application. **(08/11)**
36. Only one tank shall be degassed at a time. Tank degassing shall not take place at the same time as any other planned maintenance, startup, and shutdown activity. **(08/11)**
37. MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit. **(08/11)**
38. 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

SPECIAL CONDITIONS

Permit Number 78440

Page 33

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. Regenerative Thermal Oxidizer (EPN S10)

The Regenerative Thermal Oxidizer shall meet the requirements of Special Condition 17 of this permit.

B. Biomethanator Flare (EPN S60)

The Biomethanator Flare shall meet the requirements of Special Condition 7 of this permit.

C. Fermentation Scrubber (EPN S40)

The Fermentation Scrubber shall meet the requirements of Special Condition 6 of this permit. **(08/11)**

39. With the exception of the MAERT emission limits, these permit conditions become effective 180 days after this permit has been issued. During this period, monitoring and recordkeeping shall satisfy the requirements of Special Condition 32.A through 32.D. Emissions shall be estimated using good engineering practice and methods to provide reasonably accurate representations for emissions. The basis used for determining the quantity of air contaminants to be emitted shall be recorded. The permit holder may maintain abbreviated records of emissions from Attachment A and B activities as allowed in Special Condition 32 rather than documenting all the information required by Special Condition 32 parts A through D. **(08/11)**

Dated January 9, 2014

Permit 78440  
Attachment A  
INHERENTLY LOW EMITTING ACTIVITIES

Activity	Emissions				
	VOC	NO <sub>x</sub>	CO	PM	H <sub>2</sub> S/SO <sub>2</sub>
Equipment Painting	x				

Dated August 9, 2011

---

Permit 78440  
Attachment B  
ROUTINE MAINTENANCE ACTIVITIES

Fermentation Tank Cleaning  
Pump Maintenance and Leak Repair  
Ethanol Storage Tank Cleaning

Dated August 9, 2011

---

Permit 78440  
Attachment C  
MSS ACTIVITY SUMMARY

<b>Facilities</b>	<b>Description</b>	<b>Emissions Activity</b>	<b>EPN</b>
See Attachment A	Low Emitting Activities	See Attachment A	MSS_EP
See Attachment B	Routine Maintenance Activities	venting to regenerative thermal oxidizer or atmosphere	S10, MSS_FERM, MSS_DIST, MSS_TANK, MSS_LOAD
fermentation equipment	maintenance: fermenters emptied to beer storage tank and rinsed with process water; fermenters then rinsed with 5% caustic solution and opened to atmosphere	venting to atmosphere	MSS_FERM
fermentation equipment	shutdown: fermenters shut down	venting to fermentation scrubber	S40
fermentation equipment	startup: fermenters started up	venting to fermentation scrubber	S40
distillation process equipment	maintenance: draining distillation column and opening column to atmosphere to perform maintenance	venting to atmosphere	MSS_DIST
distillation process equipment	shutdown: distillation columns shut down	venting to regenerative thermal oxidizer	S10

<b>Facilities</b>	<b>Description</b>	<b>Emissions Activity</b>	<b>EPN</b>
rotary dryers	startup: starting up natural gas fired rotary dryers	venting to regenerative thermal oxidizer	S10
rotary dryers	shutdown: shutting down natural gas fired rotary dryers	venting to regenerative thermal oxidizer	S10
anaerobic digester	solid scrubber bed replacement	venting digester gas to either the regenerative thermal oxidizer or the Biomethanator Flare	S10, S60
boilers	startup: running boilers at 25% of firing capacity for approximately 90 minutes	venting to atmosphere	S110A, S110B
boilers	shutdown: running boilers at 25% of firing capacity for approximately 15 minutes	venting to atmosphere	S110A, S110B
emergency fire water pump	maintenance run: starting up pump once a month and running it for approximately 15 minutes	venting to atmosphere	MSS_S100

Dated August 9, 2011

