



Mark Parkinson, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

Division of Environment

July 14, 2009

Source ID No. 1750114

Mr. Nick Hatcher
President
Conestoga Energy Partners, LLC Arkalon Ethanol, LLC, Facility
300 North Lincoln, P.O. Box 1178
Liberal, KS 67905-1178

Re: Class II Air Operating Permit

Dear Mr. Hatcher:

Enclosed is the air quality Class II Operating Permit for the Arkalon Ethanol, LLC Facility ethanol facility located in Liberal, Kansas.

Please review the enclosed permit carefully because it obligates the company to certain requirements.

In October 2007 KDHE began addressing green house gas (GHG) emissions in Kansas to protect the health and environment of Kansans. To accomplish this task, KDHE will engage industries and stakeholders to establish goals for reducing GHG emissions and strategies to achieve them. Therefore, in accordance with K.S.A. 65-3005(j), KDHE is seeking your cooperation to voluntarily implement strategies, including the development and use of innovative technologies, market-based principles and other private initiatives to reduce or prevent GHG emissions.

The Performance Test Protocol required by the enclosed permit should be directed to Mr. Russ Brichacek at our Topeka office. Also, contact Mr. Jeremy Duis at (785) 296-1542 to arrange the pre-performance test meeting at least thirty (30) days in advance of the date that testing is to be conducted. Mr. Brichacek may be reached at (785) 296-1544.

As provided for in K.S.A. 65-3008b(e), an owner or operator may request a hearing within 15 days after affirmations, modification or reversal of a permit decision pursuant to subsection (b) of K.S.A. 65-3008a. In the Request for Hearing, the owner or operator shall specify the provision of this act or rule and regulation allegedly violated, the facts constituting the alleged violation and secretary's intended action. Such request must be submitted to: Director, Office of Administrative Hearings, 1020 S. Kansas Avenue, Topeka, Kansas 66612-1327. Failure to submit a timely request shall result in a waiver of the right to hearing.

DIVISION OF ENVIRONMENT
Bureau of Air & Radiation
Air Permitting Section

CURTIS STATE OFFICE BUILDING, 1000 SW JACKSON ST., STE. 310, TOPEKA, KS 66612-1366

Voice 785-296-1570 Fax 785-291-3052

Page 2
Mr. Nick Hatcher
July 14, 2009

The source identification number listed above should be used in all communication with the department about the permitted facility.

If you have any questions, please direct any questions to me at (785) 296-0365.

Sincerely,

A handwritten signature in black ink that reads "Sergio Guerra". The signature is written in a cursive style with a large initial 'S'.

Sergio Guerra
Engineering Associate
Air Permitting Section

SG:saw
Enclosure
c: SWDO
c: Russ Brichacek, BAR Topeka
O-8273



Mark Parkinson, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

Division of Environment

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**AIR EMISSION SOURCE
CLASS II OPERATING PERMIT**

Source ID No.: 1750114

Effective Date: July 14, 2009

Expiration Date: Valid until modified, revoked, or otherwise determined invalid

Source Name: Arkalon Ethanol, LLC

NAICS: 325193; Ethyl Alcohol Manufacturing

SIC: 2869; Industrial Organic Chemicals Not Elsewhere Classified

Source Location: Arkalon Ethanol, LLC Facility
Liberal, Seward County
Section 9, T34S, R32W

Mailing Address: 300 North Lincoln, P.O. Box 1178
Liberal, Kansas 67905-1178

Contact Person: Tom Willis, CEO
Telephone: (620) 626-2021

This permit is issued pursuant to K.S.A. 65-3008 as amended.

DIVISION OF ENVIRONMENT
Bureau of Air & Radiation
Air Permitting Section
CURTIS STATE OFFICE BUILDING, 1000 SW JACKSON ST., STE. 310, TOPEKA, KS 66612-1366
Voice 785-296-1570 Fax 785-291-3953

Description of Activity Subject to Air Pollution Control Regulations

On October 17, 2006 Conestoga Energy Partners, LLC (Conestoga) was issued a construction permit to build and operate the Arkalon Ethanol, LLC facility (Arkalon). Arkalon operates this 121.0 million gallon per year fuel grade ethanol (ethyl alcohol) manufacturing facility in Seward County. On March 10, 2009 Arkalon was issued a modified permit to set combined emissions limits and to incorporate two combustion temperature operating scenarios for the regenerative thermal oxidizer; one with the dryers online and one with the dryers offline.

On May 6, 2009 Arkalon submitted an application for a permit modification requesting a combined limit of 13,140 hours per 12-month cycle for the two Distillers Dried Grains with Solubles (DDGS) dryers. Also, the facility requested an increase in the aggregate HAPs emissions limits from the two boilers, regenerative thermal oxidizer, fermentation scrubber, and DDGS cooler with the DDGS dryers online and offline. This construction permit is being issued concurrently with this Class II operating permit.

The Kansas Department of Health and Environment (KDHE) has reviewed the air quality requirements associated with the Class II operating permit. The proposed activity is subject to the provisions of K.A.R. 28-19-540.

Permit Intent

The purpose of this permit is to limit the potential-to-emit to below major source thresholds in accordance with K.A.R. 28-19-540. For this facility, emissions of carbon monoxide (CO), oxides of nitrogen (NO_x), sulfur dioxide (SO₂), volatile organic compounds (VOC), particulate matter (PM/PM-10) and hazardous air pollutants (HAPs) were evaluated in determining the potential-to-emit. This permit includes restrictions that will limit the potential-to-emit of these pollutants to below major source thresholds.

To assist in demonstrating that the emission limitations imposed in this permit are not being exceeded, performance testing requirements are detailed in the permit. Attachment A (Performance Test Protocol) identifies the required elements of the performance test protocol.

Air Emission Estimates from the Facility

Table 1: Emissions (Tons per Year)

Pollutants Reviewed	Potential-to-Emit ¹ Post-permit	Estimated Operating ²
Carbon Monoxide (CO)	<100	99.2
Nitrogen Oxides (NO _x)	<100	98.4
Sulfur Dioxide (SO ₂)	<100	45.2
VOC	<100	99.2
PM	<100	97.7
PM-10	<100	65.1
Combined HAPs	<25	24.1

Permit Limitation Requirements

For the duration of this permit:

1. The maximum amount of grain processed shall not exceed 43,214,287 bushels during each consecutive twelve-month period.
2. The maximum production rate of denatured fuel grade ethanol shall not exceed 121 million gallons during each consecutive twelve-month period.
3. The two DDGS dryers shall have a maximum heat input rate of 45 MM Btu per hour each and shall be designed to process no more than 23 tons of DDGS per hour (or 196,284 tpy, total).
4. The two DDGS dryers shall be limited to no more than 13,140 hours of combined operation during any consecutive twelve (12) month period.
5. The exhaust emissions from the dryers, the process vent mixer, mixer, slurry tanks, centrate tank, yeast tank, CIP screen, and the distillation and molecular sieve condensers shall be directed to the RTO whenever the ethanol plant is operating.
6. The fermentation CO₂ scrubber (S30) must be continuously operated to control emissions of VOCs from the fermenters and the beer-well, whenever the ethanol plant is in operation.

¹ Potential-to-emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on a capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

² Estimated operating emissions are those emissions from a stationary source based on expected conditions and hours of operation.

7. When the two DDGS dryers are not operating, the exhaust from the methanators shall be directed to the flare (S60).
8. Measured as specified in a performance test protocol approved by the department, emissions from the thermal oxidizer (i.e., dryers plus RTO), combined with the emissions from the boilers shall contain no greater than 96.4 tons of NO_x, 93.20 tons of CO, during any consecutive twelve (12) month period.
9. Measured as specified in a performance test protocol approved by the department, combined emissions from the thermal oxidizer (dryers plus RTO), boilers, Type II Cooling Cyclone, and CO₂ scrubber shall contain no greater than 76.6 tons of VOC and no greater than 21.2 tons of HAPs during any consecutive 12 month period.
10. Measured as specified in a performance test protocol approved by the department, emissions from the thermal oxidizer (dryers off) and CO₂ scrubber shall contain no greater than 62.5 tons of VOC and no greater than 16.6 tons of HAPs during any consecutive 12 month period.
11. Measured as specified in a performance test protocol approved by the department, the combined emissions of particulate matter (PM) and PM with an aerometric diameter equal to or less than ten (10) microns shall be less than 42.0 tons during any consecutive twelve (12) month period emitted from the following.
 - grain unloading baghouse
 - Hammermill Stack #1
 - Hammermill Stack #2
 - Type II cooling system baghouse
 - DDGS loadout baghouse
 - Corn flour transfer conveyor baghouse
 - boilers
 - RTO (DDGS Dryers online)
12. The thermal oxidizer shall be equipped with a monitoring device to continuously measure and record the thermal oxidizer's combustion temperature. The combustion temperature shall be maintained at or above the minimum temperature at which the oxidizer operated during a successful RTO performance test conducted in accordance with this permit. For the purposes of this permit condition, a successful performance test is a test, conducted in accordance with performance test requirements of this permit, during which all of the emissions limitations in this permit for the thermal oxidizer were met.

13. All air pollution control equipment shall be properly installed, operated and maintained at all times whenever the emissions source that it is designated to control is operating. Maintenance shall be conducted according to the written air pollution control equipment maintenance plan that was developed and implemented for all equipment used to control PM, PM₁₀ and VOC and HAP emissions of the plant.
14. All roads on plant property shall be paved. Maintenance shall be performed on all roads on plant property, as necessary, to ensure that the structural integrity of the paved roads is preserved and that fugitive emissions of PM and PM₁₀ from all roads on plant property is minimized.

Performance Testing Protocol

The owner or operator shall prepare and submit a performance testing protocol to the department at least thirty (30) days in advance of a performance test meeting required by this permit. The protocol shall be prepared in accordance with Attachment A to this permit.

Performance Test Meeting

The owner or operator shall arrange a performance test meeting with the department, either in person, or via a telephone conference call, at least thirty (30) days in advance of the date that the performance testing required by this permit is to be conducted. The purpose of the meeting shall be to outline and discuss the schedule and implementation plans for conducting the performance testing required by this permit. The department may elect to have an observer(s) on-site at the facility during any or all performance testing required by this permit.

Performance Test Requirements

1. Performance testing required by this permit shall be conducted annually. These tests must be completed no less than nine (9) and no greater than twelve (12) months apart. Upon successful completion of two (2) consecutive tests, the frequency of testing may be reduced to once during each three (3) year period thereafter, so long as each test is completed successfully. In the event that a performance test is not completed successfully, the frequency of testing shall return to once annually. Three (3) consecutive successful annual tests shall be demonstrated to reduce the frequency of testing to once during each three (3) year period.
2. For the purpose of the permit, a *successful performance test* means a test completed in accordance with a performance test protocol approved by the department, during which all of the emissions limitations required by this permit were met.

3. Performance testing shall be conducted in accordance with a performance test protocol approved by the department to verify compliance with the emission limitations, conditions and requirements of this permit.

Permit Recordkeeping Requirements

1. The owner or operator shall maintain at the stationary source records demonstrating that the operating limitations imposed have not been exceeded. All records shall be in units of the Permit Limitation Requirements and shall reflect totals for the most recent 12 month period.
 - a. For **Permit Limitation Requirements 1, 2, 3, and 4** which relate to operation processing and production rates, records shall be updated monthly, no later than the last day of the following calendar month [K.A.R 28-19-501(c)]. Each record required by this section shall be maintained on-site for a period of at least two (2) years from the date of the record
 - b. For **Permit Limitation Requirements 8 through 11** which relate to emission rates, performance test records shall be maintained to estimate actual air emissions for the source. Each record required by this section shall be maintained on-site for a period of at least two (2) years from the date of the record during the once annually frequency of testing period. If the testing period increases to a frequency of once each three (3) years, each record required by this section shall be maintained on-site for a period of at least six (6) years from the date of the record.

Permit Reporting Requirements

1. In accordance with K.A.R. 28-19-546(a), the owner or operator shall submit all operating or relevant information to estimate actual air emissions for the source for the preceding calendar year to KDHE. This information shall be submitted on forms provided or approved by KDHE. If forms and instructions have not been received 30 days prior to the date specified under K.A.R. 28-19-546(a), the owner or operator should contact KDHE.
2. If, at any time, the facility's actual operations exceed 85% of the operational limitations of this permit (i.e. 102.82 gallons per year denatured ethanol), the owner or operator shall submit a report to KDHE within 45 days of the last day of the month following the conclusion of the calendar quarter [K.A.R 28-19-501(c)(1)].
3. If, at any time, the facility's actual operations exceed the operational limitations of this permit, the owner or operator shall:
 - a. notify KDHE in writing of any operational exceedance. This notification shall be mailed or delivered the first working day following discovery of the exceedance.

- b. submit to KDHE a compliance plan stating those actions being taken by the owner or operator to assure future compliance with the operational limitations. This plan shall be submitted within 60 days of discovering the exceedance. This plan will clearly state if an application for a Class II permit modification or if an application for a Class I operating permit will be submitted. Any such application will be filed within 180 days of discovering the exceedance.

Submitting any or all of these reports does not shield the owner or operator from enforcement action for exceeding the permit limitations or for other violations of the Kansas Air Quality Act or Regulations.

Permit Modification

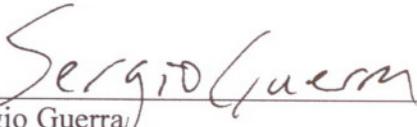
1. The owner or operator must submit a complete application for modification of this permit if there is any increase of the potential-to-emit (PTE) for the pollutants limited in this permit or if there is an increase in PTE for any regulated pollutant above the major source threshold. This application for modification must be submitted within 180 days of the initial startup of the modification.
2. A construction permit or approval must be issued by KDHE prior to commencing any construction or modification of equipment or processes which results in potential emission increases equal to or greater than the thresholds specified in K.A.R. 28-19-300.

General Provisions

1. Upon presentation of credentials and other documents as may be required by law, representatives of KDHE (including authorized contractors of the KDHE) shall be allowed by the permittee to:
 - a. enter upon the premises where a regulated facility or activity is located or conducted or where records must be kept under conditions of this document;
 - b. have access to and copies of, at reasonable times, any records that must be kept under conditions of this document;
 - c. inspect at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this document; and
 - d. sample or monitor, at reasonable times, for the purposes of assuring compliance with this document or as otherwise authorized by the Secretary of the KDHE, any substances or parameters at any location.
2. The emission unit or stationary source which is the subject of this document shall be operated in compliance with all applicable requirements of the Kansas Air Quality Act and the Federal Clean Air Act, and all applicable regulations promulgated under the Kansas Air Quality Act and the Federal Clean Air Act.

3. This document is subject to periodic review and amending as deemed necessary to fulfill the intent and purpose of the Kansas Air Quality Statutes and the Kansas Air Quality Regulations.
4. This document does not relieve the permittee of the obligation to obtain other approvals, permits, licenses, or documents of sanction which may be required by other federal, state, or local government agencies.

Permit Engineer



Sergio Guerra
Engineering Associate
Air Permitting Section

7-14-09

Date Signed

SG:saw
c: SWDO
O-8273

Addendum

Permit Addendum

The following equipment and operations were evaluated to calculate the potential-to-emit for the facility:

1. Grain Receiving, Storing & Processing Facilities:
 - a. Unloading pit to receive grain.
 - b. Two (2) grain storage bins/silos each with a storage capacity less than 1.0 million bushels total storage capacity.
 - c. Grain receiving equipment (for trucks and railcars) and one (1) day storage bin with a storage capacity of 5,000 bushels.
 - d. Four (4) hammermills.
 - e. Equipment necessary for loading distiller's dried grains and solubles (DDGS) into trucks and railcars for shipment off-site.
2. One (1) Ethanol Manufacturing Plant: storage tanks, various pumps, piping and valves, fermentation process vessels, carbon dioxide scrubber, distillation units, molecular sieves, condensers, centrifuges, evaporators, package boilers, 2-DDGS dryers, methanator and equipment for product loadout.

Specific plant equipment:

- a. Two (2) Tanks – 1,500,000 gallons each for the purpose of storing product grade denatured ethanol. Each tank shall be equipped with an interior floating roof and double wiper seal system that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- b. One (1) Tank - 200,000 gallons for the purpose of storing 200 proof (100%) ethanol. The tank shall be equipped with an interior floating roof and double wiper seal system that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- c. One (1) Tank - 200,000 gallons for the purpose of storing 190 proof (95%) ethanol. The tank shall be equipped with an interior floating roof and double wiper seal system that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- d. One (1) Tank - 200,000 gallons for the purpose of storing denaturant (natural gasoline or unleaded). The tank shall be equipped with an interior floating roof and double wiper seal system that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- e. One (1) Tank – 3,000 Gallons for the purpose of storing low vapor pressure corrosion inhibitor.
- f. Piping, Pumps and Valves: pumps, valves and flanges in light liquid service. All piping, pumps and valves shall be constructed, operated and maintained in accordance with the applicable requirements of 40 CFR Part 60, Subpart VV.

Addendum

- g. Two (2) Dryers for the purpose of drying the wet distillers grain (WDGS). The dryers shall be designed for a maximum heat input rate of 45 MM Btu per hour each and a maximum process rate of 23 tons of DDGS per hour.
- h. Two (2) Truck/Railcar Loading Terminals for the purpose of transferring denatured ethanol to trucks and railcar for shipment offsite. Truck and Rail loading shall be equipped with a common flare in order to reduce VOC emissions during loading. Trucks will not be dedicated to ethanol service.
- i. One (1) cooling tower with a design water circulation rate of 3,000,000 gallons per hour. The cooling tower is to be constructed with up to 4 cells at approximately 375,000 gallons per hour per cell.
- j. One (1) Biomethanator plant to include a flare. The flare shall operate only when the dryers or boiler(s) are not operating.
- k. Plant roads. All roads on plant property shall be paved.
- l. Two (2) 186 MMBTU gas fired package boilers used for producing steam for plant fermentation processes.
- m. One (1) Day Storage Bin (5,000 bushels capacity total) and four (4) Hammermills ventilated to four (4) baghouses that receive and mill corn from grain storage and vent to two (2) common stacks.
- n. One (1) corn flour transfer conveyor ventilated to a 2,600 cfm baghouse that receives flour from the hammermills.
- o. Grain receiving area (truck/rail) with pits ventilated to a 48,000 acfm baghouse.
- p. One (1) DDGS Type II Cooling Cyclone (with integrated 28,000 cfm baghouse) transport system, to include enclosed a storage building.
- q. One (1) DDGS Loadout operation (truck/rail) with 3,750 cfm baghouse.
- r. One (1) Anhydrous Ammonia Storage Tank (18,000 gallon pressure vessel).
- s. One (1) Emergency Fire Water Pump, driven by a 300 horsepower lean burn internal combustion engine.

Addendum

Air Pollution Control Equipment

All air pollution control equipment shall be properly installed, operated and maintained at all times whenever the emissions source that it is designated to control is operating.

1. One (1) Regenerative Thermal Oxidizer: The thermal oxidizer is fired with natural gas and designed for a maximum heat input rate of 18.0 MM Btu per hour. The exhaust emissions from the dryers, the process vent mixer, mixer, slurry tanks, centrate tank, yeast tank and the distillation and molecular sieve condensers shall be directed to the thermal oxidizer whenever the ethanol plant is operating. Exhaust emissions from the thermal oxidizer will be emitted directly to atmosphere.
2. Four (4) Fabric Filter Baghouses for the purpose of controlling particulate emissions from operation of the day bin, grain transfer, and the four hammermills. The each unit shall be designed for a 7,500 cubic foot per minute flow rate while operating at ambient temperature.
3. One (1) Fabric Filter Baghouse for the purpose of controlling particulate emissions from operation of the corn flour transfer conveyor. The unit shall be designed for a 2,600 cubic foot per minute flow rate while operating at ambient temperature.
4. One (1) Fabric Filter Baghouse for the purpose of controlling particulate matter emissions from the grain unloading truck and rail pits. The unit shall be designed for a 48,000 cubic foot per minute flow rate while operating at 67 degrees Fahrenheit.
5. One (1) flare for the purpose of controlling methane generated by the biomethanator. Exhaust from the biomethanator shall be directed to the flare whenever the dryers, boiler(s) or RTO are not operating. Otherwise, the exhaust from the biomethanator shall be directed to the dryers, boiler(s) or the RTO.
6. One (1) flare for the purpose of controlling VOC emissions from denatured ethanol truck and rail loadout terminal.
7. One (1) Fermentation CO₂ Scrubber (12,000 cfm) with sodium bisulfite injection capability for the purpose of removing VOCs from the carbon dioxide by-product stream from the fermentation processes. The packed bed water scrubber shall be designed to control the emission HAPs and VOCs emitted from the fermentation processes.
8. One (1) Type II Cyclone (DISA CYCLOPAC 4Y7) Collector with fabric filter (baghouse) for the purpose of cooling and separating the dried distillers grain and solubles prior to storage and load-out areas. The cyclone shall be designed to operate at inlet and outlet gas flow rates of 28,000 cubic feet per minute at 85 degrees Fahrenheit at a pressure drop up to approximately 3.5 inches of water. The Type II Cyclone Collector includes a baghouse placed on top of the cyclone exhaust to control particulate matter emissions.
9. One (1) fabric filter (baghouse) for the purpose of collecting PM emitted from operation of the DDGS loadout. The baghouse shall be designed to operate at 3,750 cfm.

Attachment A

Attachment A

Performance Test Protocol

Conestoga Energy Partners, LLC
Liberal, Kansas

A detailed performance test protocol, describing all test equipment, procedures, and quality assurance (QA) measures is to be prepared. The protocol must describe the specific sample collection method(s), analytical method(s), facility operating conditions, and parameters to be measured/monitored during the each performance test required by this permit. The following outline identifies the required elements of the performance test protocol.

Project Description

The project description should provide a general description of the proposed project and the testing to be performed. Where appropriate, the following shall be included:

- a. Description of plant processes and control equipment, including flow diagrams.
- b. Proposed operation ranges (production rate(s) temperature(s), flow rate(s), etc.) for the major plant equipment/processes and air pollution control equipment during the stack test program. Performance testing shall be conducted while the plant/processes/air pollution control equipment is operating at conditions representative of how the plant is expected to be operated on an everyday basis, but no less than at 90% of the maximum design rate, unless approved otherwise by the department.
- c. List of operation and emission parameters to be measured during the test and typical operating ranges for these parameters.
- d. Proposed schedule for conducting the performance testing.

Project Organization and Responsibility

A table or chart that identifies the plant and stack testing personnel responsible for conducting the performance test, showing each person=s responsibilities and the chain of command.

Quality Assurance Objectives for Measuring Data

Data quality objectives shall be determined and presented in the report submitted to the department for each measurement to ensure that the data collected is appropriate the intended use.

Attachment A

General Sampling Procedure

For each monitored parameter, a description of the sampling procedures to be used shall be provided. Officially approved EPA procedures and Reference Methods must be used where applicable. The general description shall include the following:

- a. Stack diagram showing test ports, their distances from upstream and downstream disturbances, the stack diameter, planned sampling equipment and monitoring locations.
- b. The proposed method for the determination of the presence and degree of cyclonic flow.
- c. The proposed number of sampling traverse points, sampling time at each point, and total sampling volume.
- d. A detailed description of all sampling, sample recovery, and analytical procedures. The entire procedure in the case of nonstandard procedures or modifications should be described with justifications and necessary data for backup. Options offered by the Reference Method should be selected and justified.
- e. Any special conditions for the preparation of the sampling equipment and containers to avoid sample contamination.
- f. Samples of forms to be used to record sample history, sampling conditions, and plant operating conditions.
- g. Methodology for measurement of plant and pollution control device operating conditions.
- h. If more than one sampling train is to be used, detailed description of the relevant sequencing and logistics.
- i. If Continuous Emission Monitors (CEMs) are to be used, detailed description of the operating and data logging procedures.

Attachment A

Specific Sampling Procedures

1. Performance testing for the **Regenerative Thermal Oxidizer/Two (2) Package Boilers** shall include the following:

a) Dryers ON scenario

Test Method	Parameter/Pollutant
USEPA Method 1:	Sampling Location and Cyclonic Flow Determination
USEPA Method 2:	Velocity and Volumetric Flow Rate
USEPA Method 3:	Stack Gas Molecular Weight
USEPA Method 4:	Stack Gas Moisture Content
USEPA Method 5:	Particulate Matter Emission Rate
USEPA Method 7:	NO _x Emission Rate
USEPA Method 9:	Opacity
USEPA Method 10	Carbon Monoxide Emission Rate
USEPA Method 18	GC/FID analysis with on site testing required (acetaldehyde, acetic acid, acrolein, ethanol, formaldehyde, formic acid, lactic acid and methanol).
USEPA Method 25A	Determination of Total VOC Emissions
USEPA Method 202	Condensable Particulate Matter Emission Rate
40 CFR 60.46 Test Methods & Proc.	NO _x emissions limit of 0.20 lbs/MMBtu (86 ng/J) per 40 CFR 60.44b(a). For boilers only*

b) Dryers OFF scenario

Test Method	Parameter/Pollutant
USEPA Method 18	GC/FID analysis with on site testing required (acetaldehyde, acetic acid, acrolein, ethanol, formaldehyde, formic acid, lactic acid and methanol).
USEPA Method 25A	Determination of Total VOC Emissions
40 CFR 60.46 Test Methods & Proc.	NO _x emissions limit of 0.20 lbs/MMBtu (86 ng/J) per 40 CFR 60.44b(a). For boilers only*

*Make note that 40 CFR 60.44b(a) limits emissions of oxides of nitrogen (NO_x) for the gas fired package boilers to 0.20 lbs/MMBtu (86 ng/J).

2. Performance testing for **Hammermilling and Day Bin Baghouse, Grain Unloading Pits Baghouse and the DDGS Loadout Baghouse** shall include the following:

Test Method	Parameter/Pollutant
USEPA Method 1:	Sampling Location and Cyclonic Flow Determination
USEPA Method 2:	Determination of Stack Gas Velocity and Volumetric Flow Rate
USEPA Method 3:	Determination of Stack Gas Molecular Weight
USEPA Method 4:	Determination of Stack Gas Moisture Content
USEPA Method 5:	Determination of Particulate Matter Emission Rate

Attachment A

3. Performance testing for **Type II DDGS Cooling Cyclone/Baghouse** shall include the following:

Test Method	Parameter/Pollutant
USEPA Method 1:	Sampling Location and Cyclonic Flow Determination
USEPA Method 2:	Determination of Stack Gas Velocity and Volumetric Flow Rate
USEPA Method 3:	Determination of Stack Gas Molecular Weight
USEPA Method 4:	Determination of Stack Gas Moisture Content
USEPA Method 5:	Determination of Particulate Matter Emission Rate
USEPA Method 18	GC/FID analysis with on site testing required (acetaldehyde, acetic acid, acrolein, ethanol, formaldehyde, formic acid, lactic acid and methanol).
USEPA Method 25A	Determination of Total VOC Emissions

4. Performance tests for the **Fermentation CO2 Scrubber** shall include the following:

Test Method	Parameter/Pollutant
USEPA Method 18	GC/FID analysis with on site testing required (acetaldehyde, acetic acid, acrolein, ethanol, formaldehyde, formic acid, lactic acid and methanol).
USEPA Method 25A	Determination of Total VOC Emissions

Calibration procedures shall be identified and the information provided to KDHE for each measurement device, including coefficients, multipliers, by reference to a standard method or by providing a written description. The frequency planned for recalibration during the test shall be provided KDHE in addition to a list of all calibration standards, including their source and traceability. Equipment to be calibrated includes: dry gas meters, orifice meters, pitot-tubes, thermometers/thermocouples, nozzles, flow meters and may include various process parameter monitors.



Mark Parkinson, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

www.kdheks.gov

Division of Environment

July 14, 2009

Source ID No. 1750114

Mr. Nick Hatcher
President
Arkalon Ethanol, LLC, Facility
300 North Lincoln, P.O. Box 1178
Liberal, KS 67905-1178

Re: Air Construction Permit Modification for Conestoga Energy Partners, LLC-
Arkalon Ethanol, LLC, Facility

Dear Mr. Hatcher:

Enclosed is the air quality construction permit modification for the Arkalon Ethanol, LLC, Facility in Seward County, KS. The source identification number 1750114 should be used in all communication with KDHE about the permitted facility.

Please review the enclosed permit carefully because it obligates the company to certain requirements.

Any questions concerning the Performance Test Protocol required by the enclosed permit should be directed to Mr. Jeremy Duis at our Topeka office. Also, please contact Mr. Duis to arrange the pre-performance test meeting at least thirty (30) days in advance of the date that testing is to be conducted. Mr. Duis may be reached at (785) 296-1542.

As provided for in K.S.A. 65-3008b(e), an owner or operator may request a hearing within 15 days after affirmations, modification or reversal of a permit decision pursuant to subsection (b) of K.S.A. 65-3008a. In the Request for Hearing, the owner or operator shall specify the provision of this act or rule and regulation allegedly violated, the facts constituting the alleged violation and secretary's intended action. Such request must be submitted to: Director, Office of Administrative Hearings, 1020 S. Kansas Avenue, Topeka, Kansas 66612-1327. Failure to submit a timely request shall result in a waiver of the right to hearing.

DIVISION OF ENVIRONMENT
Bureau of Air & Radiation
Air Permitting Section

CURTIS STATE OFFICE BUILDING, 1000 SW JACKSON ST., STE. 310, TOPEKA, KS 66612-1366

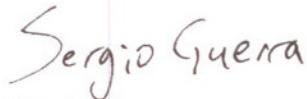
Voice 785-296-1570 Fax 785-291-3953

Page 2
Mr. Nick Hatcher
July 14, 2009

In October 2007 KDHE began addressing green house gas (GHG) emissions in Kansas to protect the health and environment of Kansans. To accomplish this task, KDHE will engage industries and stakeholders to establish goals for reducing GHG emissions and strategies to achieve them. Therefore, in accordance with K.S.A. 65-3005(j), KDHE is seeking your cooperation to voluntarily implement strategies, including the development and use of innovative technologies, market-based principles and other private initiatives to reduce or prevent GHG emissions.

If you have any questions, please contact me at (785) 296-0365.

Sincerely,



Sergio Guerra
Engineering Associate
Air Permitting Section

SG:saw
Enclosure
c: Southwest District Office
C-8485



Mark Parkinson, Governor
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH
AND ENVIRONMENT

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Division of Environment

AIR EMISSION SOURCE CONSTRUCTION PERMIT

Source ID No: 1750114

Effective Date: October 17, 2006 (modified on March 10, 2009, July 14, 2009)

Source Name: Arkalon Ethanol, LLC

SIC Code: 2869; Industrial Organic Chemicals Not Elsewhere Classified

NAICS Code: 325193; Ethyl Alcohol Manufacturing

Source Location: Arkalon Ethanol, LLC Facility
Liberal, Seward County
Section 9, T34S, R32W

Mailing Address: 300 North Lincoln
Liberal, KS 67901

Contact Person: Tom Willis, CEO
Telephone: (620) 626-2021

This permit is issued pursuant to K.S.A. 65-3008 as amended

Summary of Modified Requirements, Conditions, Standards, or Limitations

Conestoga Energy Partners, LLC (Conestoga) proposes to modify the construction permit issued to the Arkalon Ethanol, LLC (Arkalon) facility on October 17, 2006. The facility is requesting to set a combined limit of 13,140 hours per 12-month cycle for the two DDGS dryers. Also, the facility is requesting an increase in the aggregate HAPs emissions limits from the two boilers, regenerative thermal oxidizer, fermentation scrubber, and DDGS cooler with the two DDGS dryers online and offline.

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A previous modification issued on March 10, 2009 established combined emissions limits for the Arkalon facility. The permit modification also established two combustion temperature operating scenarios for the regenerative thermal oxidizer; one with the dryers online and one with the dryers offline. The facility's as-built equipment conditions were also updated.

Description of Activity Subject to Air Pollution Control Regulations

Arkalon Ethanol, LLC is a 121.0 million gallon per year fuel grade ethanol (ethyl alcohol) manufacturing facility in Seward County. Grain, primarily corn and milo, are being used as the raw material. The plant can produce either distiller's dried grains and solubles (DDGS) or wet cake for animal feed as a by-product of the alcohol manufacturing process.

This permit contains federally enforceable conditions that limit the emission of Clean Air Act criteria air pollutants to below the major source threshold of 100 tons per year. This permit also requires use of air pollution control equipment that will limit the emission of hazardous air pollutants (HAP) to less than the HAP major source thresholds of ten (10) tons per year for a single HAP and twenty-five tons (25) per year for any combination of HAPs.

Emissions estimates of particulate matter (PM), PM with an aerodynamic diameter less than or equal to ten microns (PM₁₀), oxides of nitrogen (NO_x), carbon monoxide (CO), oxides of sulfur (SO_x) and volatile organic compounds (VOCs) were evaluated by the department during the review of the permit for the proposed facility. Construction of the proposed facility is subject to the provisions of K.A.R. 28-19-300 (construction permits and approvals; applicability) because the project's potential to emit (PTE) of particulate matter (PM) and PM₁₀ is greater than twenty-five (25) and fifteen (15) tons per year respectively; and the PTE of oxides of sulfur (SO₂), oxides of nitrogen (NO_x) and volatile organic compounds exceeds forty (40) tons per year.

Significant Applicable Air Regulations

The following air quality requirements were determined to be applicable to this source:

1. KAR 28-19-300 Construction Approval and Operating Permit
2. KAR 28-19-20. Particulate Matter Emission Limitations.
3. KAR 28-19-650(a)(3). Opacity Requirements.
5. KAR 28-19-31. Boiler Requirements.

6. KAR 28-19-720. New Source Performance Standards, by reference, the following:
 - a. 40 CFR Part 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid (VOL) Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.
 - b. 40 CFR Part 60 Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.
 - c. 40 CFR Part 60 Subpart Db – Industrial-Commercial-Institutional Steam Generating Units.

Air Emission Unit Technical Specifications

The following equipment, or equivalent, is approved:

1. Grain Receiving & Processing Facilities:
 - a. Unloading pit to receive grain.
 - b. Two (2) grain storage bins/silos each with a storage capacity less than 1.0 million bushels total storage capacity.
 - c. Grain receiving equipment (for trucks and railcars) and one (1) day storage bin with a storage capacity of 5,000 bushels.
 - d. Four (4) hammermills.
 - e. Equipment necessary for loading distiller's dried grains and solubles (DDGS) into trucks and railcars for shipment off-site.
2. One (1) Ethanol Manufacturing Plant: storage tanks, various pumps, piping and valves, fermentation process vessels, carbon dioxide scrubber, distillation units, molecular sieves, condensers, centrifuges, evaporators, package boilers, two (2) DDGS dryers, methanator and equipment for product loadout.

Specific plant equipment:

- a. Two (2) Tanks – 1,500,000 gallons each for the purpose of storing product grade denatured ethanol. Each tank shall be equipped with an interior floating roof and double wiper seal system that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.

- b. One (1) Tank - 200,000 gallons for the purpose of storing 200 proof (100%) ethanol. The tank shall be equipped with an interior floating roof and double wiper seal system that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- c. One (1) Tank - 200,000 gallons for the purpose of storing 190 proof (95%) ethanol. The tank shall be equipped with an interior floating roof and double wiper seal system that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- d. One (1) Tank - 200,000 gallons for the purpose of storing denaturant (natural gasoline or unleaded). The tank shall be equipped with an interior floating roof and double wiper seal system that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- e. One (1) Tank – 3,000 Gallons for the purpose of storing low vapor pressure corrosion inhibitor.
- f. Piping, Pumps and Valves: pumps, valves and flanges in light liquid service. All piping, pumps and valves shall be constructed, operated and maintained in accordance with the applicable requirements of 40 CFR Part 60, Subpart VV.
- g. Two (2) DDGS Dryers for the purpose of drying the wet distillers grain (WDGS). The dryers shall be designed for a maximum heat input rate of 45 MM Btu per hour each and a maximum process rate of 23 tons of DDGS per hour.
- h. Two (2) Truck/Railcar Loading Terminals for the purpose of transferring denatured ethanol to trucks and railcar for shipment offsite. Truck and Rail loading shall be equipped with a common flare in order to reduce VOC emissions during loading. Trucks will not be dedicated to ethanol service.
- i. One (1) Cooling Tower with a design water circulation rate of 3,000,000 gallons per hour. The cooling tower is to be constructed with up to 4 cells at approximately 375,000 gallons per hour per cell.
- j. One (1) Biomethanator plant to include a flare. The flare shall operate only when the dryers or boiler(s) are not operating.
- k. Plant roads. All roads on plant property shall be paved.
- l. Two (2) 186 MMBTU gas fired package boilers used for producing steam for plant fermentation processes.
- m. One (1) Day Storage Bin (5,000 bushels capacity total) and four (4) Hammermills ventilated to four (4) baghouses that receive and mill corn from grain storage and vent to two (2) common stacks.

- n. One (1) corn flour transfer conveyor ventilated to a 2,600 cfm baghouse that receives flour from the hammermills.
- o. Grain receiving area (truck/rail) with pits ventilated to a 48,000 acfm baghouse.
- p. One (1) DDGS Type II Cooling Cyclone (with integrated 28,000 cfm baghouse) transport system, to include enclosed a storage building.
- q. One (1) DDGS Loadout operation (truck/rail) with 3,750 cfm baghouse.
- r. One (1) Anhydrous Ammonia Storage Tank (18,000 gallon pressure vessel).
- s. One (1) Emergency Fire Water Pump, driven by a 300 horsepower lean burn internal combustion engine.

Air Pollution Control Equipment

All air pollution control equipment shall be properly installed, operated and maintained at all times whenever the emissions source that it is designated to control is operating.

1. One (1) Regenerative Thermal Oxidizer: The thermal oxidizer is fired with natural gas and designed for a maximum heat input rate of 18.0 MM Btu per hour. The exhaust emissions from the dryers, the process vent mixer, mixer, slurry tanks, centrate tank, yeast tank and the distillation and molecular sieve condensers shall be directed to the thermal oxidizer whenever the ethanol plant is operating. Exhaust emissions from the thermal oxidizer will be emitted directly to atmosphere.
2. Four (4) Fabric Filter Baghouses for the purpose of controlling particulate emissions from operation of the day bin, grain transfer, and the four hammermills. The each unit shall be designed for a 7,500 cubic foot per minute flow rate while operating at ambient temperature.
3. One (1) Fabric Filter Baghouse for the purpose of controlling particulate emissions from operation of the corn flour transfer conveyor. The unit shall be designed for a 2,600 cubic foot per minute flow rate while operating at ambient temperature.
4. One (1) Fabric Filter Baghouse for the purpose of controlling particulate matter emissions from the grain unloading truck and rail pits. The unit shall be designed for a 48,000 cubic foot per minute flow rate while operating at 67 degrees Fahrenheit.
5. One (1) flare for the purpose of controlling methane generated by the biomethanator. Exhaust from the biomethanator shall be directed to the flare whenever the dryers, boiler(s) or RTO are not operating. Otherwise, the exhaust from the biomethanator shall be directed to the dryers, boiler(s) or the RTO.

6. One (1) flare for the purpose of controlling VOC emissions from denatured ethanol truck and rail loadout terminal.
7. One (1) Fermentation CO₂ Scrubber (12,000 cfm) with sodium bisulfite injection capability for the purpose of removing VOCs from the carbon dioxide by-product stream from the fermentation processes. The packed bed water scrubber shall be designed to control the emission HAPs and VOCs emitted from the fermentation processes.
8. One (1) Type II Cyclone (DISA CYCLOPAC 4Y7) Collector with fabric filter (baghouse) for the purpose of cooling and separating the dried distillers grain and solubles prior to storage and load-out areas. The cyclone shall be designed to operate at inlet and outlet gas flow rates of 28,000 cubic feet per minute at 85 degrees Fahrenheit at a pressure drop up to approximately 3.5 inches of water. The Type II Cyclone Collector includes a baghouse placed on top of the cyclone exhaust to control particulate matter emissions.
9. One (1) fabric filter (baghouse) for the purpose of collecting PM emitted from operation of the DDGS loadout. The baghouse shall be designed to operate at 3,750 cfm.

Air Emissions Estimates from the Proposed Activity

POLLUTANT	Emissions (tons per year)		
	Potential-to-Emit ¹		Estimated Operating ²
	Pre-Permit	Post-Permit	
PM	>100	< 100	97.68
PM ₁₀	>100	< 100	65.14
NO _x	>100	< 100	98.40
CO	>100	< 100	99.20
SO _x	>100	< 100	45.23

¹ Potential-to-emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, is treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

² Estimated operating emissions are those emissions from a stationary source based on proposed conditions and hours of operation.

POLLUTANT	Emissions (tons per year)		
	Potential-to-Emit ¹		Estimated Operating ²
	Pre-Permit	Post-Permit	
VOC	>100	< 100	99.20
HAPs	>25	< 25	24.12

Air Emission Limitations

1. K.A.R. 28-19-20 limits the quantity of particulate emissions from processing equipment in proportion to the rate at which materials are processed. This regulation applies to the grain unloading/DDGS loading system and the hammermills. Based upon information provided in the permit application, the proposed facility is expected to operate in compliance with K.A.R. 28-19-20.
2. K.A.R. 28-19-650(a)(3) limits opacity of visible emissions to 20% for all emission units, except for the flares that are used to control emissions from the methanators and the loadout terminal.
3. The flares used to control emissions from the methanator and loadout terminal shall be designed and properly operated to emit no visible emissions in accordance with 40 CFR 60.18.
4. Measured as specified in a performance test protocol approved by the department, emissions from the thermal oxidizer (i.e., dryers plus RTO), combined with the emissions from the boilers shall contain no greater than 96.4 tons of NOx, 93.20 tons of CO, during any consecutive twelve (12) month period.
5. Measured as specified in a performance test protocol approved by the department, combined emissions from the thermal oxidizer (dryers plus RTO), boilers, Type II Cooling Cyclone, and CO2 scrubber shall contain no greater than 76.6 tons of VOC and no greater than 21.2 tons of HAPs during any consecutive 12 month period.
6. Measured as specified in a performance test protocol approved by the department, emissions from the thermal oxidizer (dryers off) and CO2 scrubber shall contain no greater than 62.5 tons of VOC and no greater than 16.6 tons of HAPs during any consecutive 12 month period.

7. Measured as specified in a performance test protocol approved by the department, the combined emissions of particulate matter (PM) and PM with an aerometric diameter equal to or less than ten (10) microns shall be less than 42.0 tons during any consecutive twelve (12) month period emitted from the following.
 - grain unloading baghouse
 - Hammermill Stack #1
 - Hammermill Stack #2
 - Type II cooling system baghouse
 - DDGS loadout baghouse
 - Corn flour transfer conveyor baghouse
 - boilers
 - RTO (DDGS dryers online)

Permit Conditions

1. The maximum amount of grain processed shall not exceed 43,214,287 bushels during each consecutive twelve-month period.
2. The maximum production rate of the ethanol manufacturing plant shall not exceed 121 million gallons of product grade denatured alcohol during each consecutive twelve month period.
3. The two DDGS dryers shall have a maximum heat input rate of 45 MM Btu per hour each and shall be designed to process no more than 23 tons of DDGS per hour (or 196,284 tpy, total).
4. The thermal oxidizer shall be equipped with a monitoring device to continuously measure and record the thermal oxidizer's combustion temperature. The combustion temperature shall be maintained at or above the minimum temperature at which the oxidizer operated during a successful RTO performance test conducted in accordance with this permit.
5. A written air pollution control equipment maintenance plan shall be developed, implemented, and maintained for all air pollution control equipment and the plant roads within 180 days of startup of the plant.
6. All roads on plant property shall be paved. Maintenance shall be performed on all roads on plant property, as necessary, to ensure that the structural integrity of the paved roads is preserved and that fugitive emissions of PM and PM₁₀ from all roads on plant property is minimized.

7. The exhaust emissions from the dryers, the process vent mixer, mixer, slurry tanks, centrate tank, yeast tank, CIP screen, and the distillation and molecular sieve condensers shall be directed to the RTO whenever the ethanol plant is operating.
8. The fermentation CO₂ scrubber (S30) must be continuously operated to control emissions of VOCs from the fermenters and the beer-well, whenever the ethanol plant is in operation.
9. When the dryers are not operating, the exhaust from the methanators shall be directed to the flare (S60).
10. The two DDGS dryers shall be limited to no more than 13,140 hours of combined operation during any consecutive twelve (12) month period.

NSPS Subpart Kb Tank Conditions

11. All floating roof tanks with a fixed roof in combination with an internal floating roof meeting the following specifications [40 CFR 60.112b(a)(1)]:
 - a. The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible [40 CFR 60.112b(a)(1)(i)].
 - b. The internal floating roof shall be equipped with a seal meeting the requirements of 40 CFR 60.112b(a)(1)(ii) as a closure device between the wall of the storage vessel and the edge of the internal floating roof [40 CFR 60.112b(a)(1)(ii)].
 - c. Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents shall provide a projection below the liquid surface [40 CFR 60.112b(a)(1)(iii)].
 - d. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains shall be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use [40 CFR 60.112b(a)(1)(iv)].

- e. Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports [40 CFR 60.112b(a)(1)(v)].
- f. Rim space vents shall be equipped with a gasket and shall be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting [40 CFR 60.112b(a)(1)(vi)].
- g. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening [40 CFR 60.112b(a)(1)(vii)].
- h. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover [40 CFR 60.112b(a)(1)(viii)].
- i. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover [40 CFR 60.112b(a)(1)(ix)].

NSPS Subpart VV Conditions - Pumps in Light Liquid Service

The provisions of 40 CFR Part 60 Subpart VV and Subpart A apply to the group of all equipment within each process unit. Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems as specified by 40 CFR Part 60 Subpart VV.

- 12. The owner or operator shall apply the following requirements to all hard piping and equipment in light liquid service:
 - a. Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b), except as provided at 40 CFR 60.482-1(c) and paragraphs (d), (e), and (f) of 40 CFR 60.482-2.
 - b. Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.
 - c. When an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
 - d. If there are indications of liquids dripping from the pump seal, a leak is detected.
 - e. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided at 40 CFR 60.482-9.

- f. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
13. The owner or operator shall apply the following requirements to all valves in gas/vapor VOC service and valves in light liquid VOC service:
- a. Each valve in VOC service shall be monitored monthly to detect leaks by the test methods and procedures specified at 40 CFR 60.485(b).
 - b. When an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
 - c. Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.
 - d. If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.
 - e. When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided at 40 CFR 60.482-9
 - f. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
 - g. First attempts at repair include, but are not limited to, the following best practices where practicable:
 - (1) Tightening of bonnet bolts;
 - (2) Replacement of bonnet bolts;
 - (3) Tightening of packing gland nuts;
 - (4) Injection of lubricant into lubricated packing.

NSPS Subpart Db Conditions Industrial-Commercial-Institutional Steam Generating Units

14. The boilers shall meet the following emission limitations and conditions:
- (a) Limit the NO_x emissions to 0.20 lb/MMBtu or less and perform a 30 day startup continuous NO_x emission monitoring test to show compliance with the NO_x limit. [40 CFR 60.48(b)]

15. The continuous emission monitoring system (CEMS) shall measure and record the concentration of NO_x from the 186 MMBtu/hr natural gas fired boilers in order to demonstrate compliance with 40 CFR 60.44b [40 CFR 60.46b(c)].
 - a. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installations requirements and the data analysis and reporting requirements specified in the Performance Specification Number 2, 40 CFR Part 60, Appendix B.
 - b. The permittee 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 KDHE, and necessary corrective action shall be taken
 - c. The monitoring data shall be reduced to eight-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 pounds per MM Btu at least once every week.
 - 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 KDHE, be used to determine compliance with the conditions of this permit.
 - e. The KDHE shall be notified at least 30 days prior to any required RATA in order to provide 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. The measurements missed due to startup, shutdown or malfunction, shall be estimated using engineering judgment and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required.

NSPS Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

16. The owner or operator shall comply with the following requirements for the emergency compression ignition internal combustion engine placed in service:
 - a. The emergency fire pump shall comply with the applicable requirements specified in 40 CFR 60.4205 of Subpart IIII.
 - b. The facility shall operate and maintain the emergency fire pump according to manufacturer's written instructions or by procedures developed by the owner or operator that are approved by the manufacturer, over the life of the engine.

- c. The emergency fire pump shall meet the applicable fuel requirements referenced in 40 CFR 60.4207 of Subpart IIII.
- d. The owner or operator shall meet the following monitoring requirements for the emergency fire pump:
 - ii. The owner or operator shall install a non-resettable hour meter prior to startup.
 - iii. The owner or operator shall meet the monitoring requirements specified in 40 CFR 60.4209.
- e. The owner or operator shall meet the following compliance requirements for the emergency fire pump:
 - i. The owner or operator shall comply with the emission standards specified in 40 CFR 60.4211, and operate and maintain the emergency fire pump according to the manufacturer's written instructions or by procedures developed by the facility that is approved by the manufacturers.
 - ii. The owner or operator shall also comply with the applicable requirements of 40 CFR parts 89 and/or 1068.
 - iii. The owner or operator shall keep records of the emergency fire pump manufacturer data as necessary to demonstrate compliance with the standards.
- f. The emergency fire pump may be operated for the purpose of maintenance and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engines. Maintenance checks and readiness testing of the units is limited to 100 hours per year. There is no time limit on the use of the fire pump in emergency situations. The owner or operator may petition KDHE for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency units beyond 100 hours per year.

Plant Roads

- 17. All roads on plant property shall be paved. The roads shall be constructed, operated and maintained to minimized generation of particulate matter (PM) and PM less than ten (10) microns in diameter.

Performance Test Protocol

The owner or operator shall prepare and submit a performance testing protocol to the department at least sixty (60) days in advance of a pre-performance test meeting required by this permit. The protocol shall be prepared in accordance with Attachment A to this permit.

Pre-Performance Test Meeting

The facility shall arrange for a pre-performance test meeting or conference call with KDHE, in advance of the date of conducting any emission source performance tests required by the air permit. The purpose of the meeting will be to outline and discuss the schedule and implementation plans for conducting any required performance test(s). The KDHE may elect to have an observer(s) on-site at the facility during any or all emission source performance testing required by the air permit.

Performance Test Requirements

1. All performance testing, notifications, reporting of results and performance test compliance time-frames shall be conducted/deadlines met in accordance with the requirements of 40 CFR 60.8.
2. Performance testing required by this permit shall be conducted in accordance with a performance test protocol approved by the KDHE to verify compliance with the requirements of this permit.
3. For the purpose of this permit, a *successful performance test* means a test conducted in accordance with a performance test protocol approved by the KDHE, the results of which demonstrate that all of the emissions limitations required by this permit were met.
4. Performance testing required by this permit shall be conducted initially, as described herein; and then again once during each of the two (2) years following successful completion of the initial performance testing. These test must be completed no less than nine (9) and no greater than twelve(12) months apart. Upon successful completion of three (3) consecutive tests, the frequency of testing may be reduced to once during each three (3) year period thereafter, so long as each test is completed successfully. In the event that a performance test is not completed successfully, the frequency of testing shall return to once annually, until three (3) consecutive successful tests have again been demonstrated.

5. Tanks: After installing a permanently fixed roof and internal floating roof on the IFR tanks, the facility shall [40 CFR 60.113b(a)]:
 - a. Visually inspect the internal floating roof and the primary seal prior to filling the storage vessel with any volatile organic liquid (VOL). If there are holes, tears, or other openings in the primary seal, secondary seal, or the seal fabric or defects in the internal floating roof, or both, the facility shall repair the items before filling the storage vessel [40 CFR 60.113b(a)(1)].
 - b. If the vessel is equipped with a liquid-mounted or mechanical shoe seal, the facility shall visually inspect the internal floating roof and the primary seal through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the facility shall repair the items or empty and remove the storage vessel from service within 45 days. [40 CFR 60.113b(a)(2)]. If the vessel is equipped with a double-seal system, the facility shall comply with the requirements at 40 CFR 60.113b(a)(3).
 - c. Visually inspect the internal floating roof, the primary seal, gaskets, slotted membranes, and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the facility shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this paragraph occur at intervals greater than 10 years in the case of vessels conducting annual inspections as specified in Performance Testing and Compliance Item No. 4(b) [40 CFR 60.113b(a)(4)].
6. Piping and Equipment: Performance testing as required by 40 CFR 60.485. Performance testing shall be conducted within 60 days after achieving the maximum production rate at which the subject equipment shall be operated but no later than 180 days after initial startup.
7. Regenerative Thermal Oxidizer: NO_x/CO/VOC/HAP/PM/PM₁₀ compliance testing shall consist of three (3) 1 hour runs for operating condition (a). Compliance testing for operating condition (b) will consist of VOC and HAP emissions only. The two operating conditions for testing will be:
 - (a) DDGS Dryers online
 - (b) DDGS Dryers offline

8. Boilers: NOx testing shall be for 30 days, using EPA Method 7E. CO testing shall be three (3) 1 hour runs using EPA Method 10. A NOx “Operations Monitoring Plan” in lieu of Continuous Emission Monitoring for NOx shall be prepared in lieu of CEMS for NOx emission calculations and compliance. The NOx Operations Plan shall be submitted to KDHE for review and approval within 360 days of initial startup.

Record Keeping Requirements

1. The facility shall monitor and record the quantity of grain processed, the fuel grade ethanol produced, and the hours of operation for the DDGS dryers during each consecutive 12 month periods to demonstrate compliance with *Permit Conditions 1, 2 and 10* of this permit.
2. For *Air Emission Limitations 4-7* performance test records shall be maintained to ensure compliance with the emission limits included therein.
3. The facility shall maintain a written log showing the date of all routine or other maintenance, malfunction or repair of the thermal oxidizer, fermentation CO2 scrubber and baghouses, the nature of the action taken on such date and any corrective action or preventive measures taken.

NSPS Subpart Kb Record Keeping – IFR Tanks

4. The facility shall keep readily accessible records showing the dimensions of the IFR Subpart Kb tanks listed and an analysis showing the capacity of each tank. These records shall be kept for the life of the tanks [40 CFR 60.116b(b)].
5. In accordance with 40 CFR 60.7(b), the facility shall maintain records of the occurrence of any startup, shutdown, or malfunction in the operation of tanks.
6. The facility shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. This record shall be kept on-site for at least 2 years [40 CFR 60.116b(a)].
7. The facility shall keep a record of each inspection performed as required by Performance Test Requirements 4(a), 4(b), and 4(c). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings) [40 CFR 60.115b(a)(2)].

NSPS Subpart VV - All Piping Equipment (Valves and Pumps)

8. In accordance with 40 CFR 60.7(b), the facility shall maintain records of the occurrence of any startup, shutdown, or malfunction in the operation of all piping equipment.

9. When each leak is detected as specified, a weatherproof and readily visible identification (tag), marked with the equipment identification number, shall be attached to the leaking equipment. The identification on the pressure relief device may be removed after it has been repaired.
10. When each leak is detected as specified, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:
 - a. The instrument and operator identification numbers and the equipment identification number.
 - b. The date the leak was detected and the dates of each attempt to repair the leak.
 - c. Repair methods applied in each attempt to repair the leak.
 - d. "Above 10,000 ppm" if the maximum instrument reading measured by the methods specified after each repair attempt is 10,000 ppm or greater.
 - e. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
 - f. The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.
 - g. The expected date of successful repair of the leak if a leak is not repaired within 15 days.
 - h. Dates of process unit shutdowns that occur while the equipment is unrepaired.
 - i. The date of successful repair of the leak.
11. The facility shall develop and maintain a list of identification numbers for equipment subject to 40 CFR Part 60 Subpart VV.
12. The facility shall maintain a list of identification numbers for equipment that are designated for no detectable emissions as provided at 40 CFR 60.482-2(e), 40 CFR 60.482-3(i), and 40 CFR 60.482-7(f). The designation shall be signed by a facility representative.
13. The facility shall maintain a list of equipment identification numbers for pressure relief devices.
14. The facility shall maintain records of the dates of each compliance test as required, the background level measured during each compliance test and the maximum instrument reading measured at the equipment during each compliance test.

15. The facility shall maintain a list of identification numbers for equipment in vacuum service.
16. All records required to be kept by this permit shall be maintained on site at the facility for at least two (2) years from the date of record.

NSPS Subpart Db Conditions –Industrial-Commercial-Institutional Steam Generating Units

17. The facility shall maintain a record of the first NOx 30 day performance test if KDHE does not subject the two (2) package Boilers to continuous NOx emission monitoring (CEMS) alternative [40 CFR 60.49b].
18. The facility shall maintain records in accordance with the proposed KDHE approved Operations Monitoring Plan for NOx compliance [40 CFR 60.49b].

NSPS Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

19. The facility shall keep the following records with regards to the fire pump:
 - a. Maintenance conducted on the fire pump.
 - b. If the fire pump is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.
 - c. If the fire pump is not a certified engine, documentation that the engine meets the emission standards.

Additional Requirements

20. In accordance with 40 CFR 60.7(b), records consisting of the occurrence and duration of any start-up, shutdown or malfunction of each 40 CFR Part 60 affected facility (including malfunction of control equipment) shall be maintained.
21. Each record required to be kept by this permit shall be maintained on-site at the facility for at least two (2) years from the date of record.

Reporting

NSPS Kb Reporting – IFR Tanks

1. The facility shall furnish KDHE reports of the following information [40 CFR 60.115b], and the facility shall keep copies of all reports on-site for at least two years from the date of the report.

- a. Furnish the KDHE with a report that describes the as-built control equipment and certifies that the control equipment meets the applicable specifications. The report shall be appended to the notification required [40 CFR 60.115b(a)(1)].
- b. If any of the conditions described in Performance Test Requirement Item No. 4(b) (preceding) are detected during the annual visual inspection required by Performance Test Requirement 4(b), a report shall be furnished to the KDHE within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made (40 CFR 60.115b(a)(3)).

NSPS VV Reporting - All Piping Equipment

2. The facility shall submit semiannual reports to the KDHE beginning six months after the initial startup date.
3. The initial semiannual report to KDHE shall include the following information:
 - a. Process unit identification.
 - b. Number of valves subject to the requirements of 40 CFR Part 60 Subpart VV, Standards for valves in gas/vapor service in light liquid service, excluding those designated for no detectable emissions or under negative pressure.
 - c. Number of pumps subject to the requirements of 40 CFR Part 60 Subpart VV, Standards for pumps in light liquid service, excluding those designated for no detectable emissions.
4. The semiannual reports to KDHE shall include the following information, summarized from records required to be kept onsite (40 CFR 60.487(c)):
 - a. Process unit identification.
 - b. For each month during the semiannual reporting period:
 - i. Number of valves for which leaks were detected,
 - ii. Number of valves for which leaks were not repaired as required,
 - iii. Number of pumps for which leaks were detected,
 - iv. Number of pumps for which leaks were not repaired as required,
 - v. The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible,

- c. Dates of process unit shutdowns which occurred within the semiannual reporting period,
 - d. Revisions to items reported if changes have occurred since the initial report or subsequent revisions to the initial report.
5. The facility shall report the results of all performance tests to the KDHE, by reference, 40 CFR 60.8.

NSPS Subpart Db Conditions – Industrial-Commercial-Institutional Steam Generating Units

6. The facility shall report of the results of all performance tests to the KDHE, by reference, 40 CFR 60.48c within 30 days of receipt of any test data from performance test contractor.
7. The facility shall report to KDHE the anticipated date of initial startup per 40 CFR 60.7 between 30 and 60 days of actual startup. Actual startup shall be reported within 15 days after actual startup date.
8. The facility shall submit the NOx Operations Monitoring Plan to KDHE within 360 days of startup. The operating requirements of that plan shall be reported to KDHE based on the approved plan monitoring and reporting requirements.

Notification

1. Written notifications (40 CFR 60.7) of the following shall be submitted to KDHE:
 - a. for all tanks, piping equipment and Boilers, the date construction commenced, postmarked no less than 30 days after such date;
 - b. for all tanks and piping, the actual date of initial startup of the project, postmarked within fifteen (15) days after such date; and
 - c. for all tanks, the date when initial performance testing is to commence postmarked no less than 30 days prior to such date.

A NSPS notification form (or format, or a letter) shall be used to submit the above required notifications.

2. The facility [40 CFR 60.7(a)(4)] shall provide written notification for any physical or operational change which may increase the emission rate of any air pollutant to which a standard applies. The notification shall be postmarked 60 days, or as soon as practicable, before the change is commenced and shall include information described in the following:
 - a. the precise nature of the change;
 - b. the productive capacity before and after the change; and

- c. the expected completion date of the change.
3. The facility shall notify KDHE when the plant construction projects are completed so that an evaluation may be conducted.

General Provisions

1. This document shall become void if the construction or modification has not commenced within 18 months of the effective date, or if the construction or modification is interrupted for a period of 18 months or longer.
2. A construction permit or approval must be issued by KDHE prior to commencing any construction or modification of equipment or processes other than activities provided for under this approval which results in potential-to-emit increases equal to or greater than the thresholds specified at K.A.R. 28-19-300.
3. Upon presentation of credentials and other documents as may be required by law, representatives of the KDHE (including authorized contractors of the KDHE) shall be allowed to:
 - a. enter upon the premises where a regulated facility or activity is located or conducted or where records must be kept under conditions of this document;
 - b. have access to and copy, at reasonable times, any records that must be kept under conditions of this document;
 - c. inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this document; and
 - d. sample or monitor, at reasonable times, for the purposes of assuring compliance with this document or as otherwise authorized by the Secretary of the KDHE, any substances or parameters at any location.
4. The emission unit or stationary source which is the subject of this document shall be operated in compliance with all applicable requirements of the Kansas Air Quality Act and the federal Clean Air Act.
5. This document is subject to periodic review and amendment as deemed necessary to fulfill the intent and purpose of the Kansas Air Quality Statutes and Regulations.

6. This document does not relieve the owner/operator of the obligation to obtain other approvals, permits, licenses, or documents of sanction which may be required by other federal, state, or local agencies.
7. Issuance of this document does not relieve the owner or operator of any requirement to obtain an air quality operating permit under any applicable provision of K.A.R. 28-19-500.

Permit Engineer

Sergio Guerra

Sergio Guerra
Engineering Associate
Air Permitting Section

7-14-09

Date Signed

SG:saw
C-8290