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Governor

STATE OF NEBRASKA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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CONSTRUCTION PERMIT

PERMIT NUMBER: CP04-0061

**PERMIT TO CONSTRUCT AN
AIR CONTAMINANT SOURCE
IS HEREBY ISSUED TO:**

Elkhorn Valley Ethanol, LLC

PO Box 507

Elkhorn, Nebraska 68022-0507

FOR THE SPECIFIC CONSTRUCTION OF:

An Ethanol Manufacturing Facility

TO BE LOCATED AT:

3002 N. Victory Road

Norfolk, Madison County, Nebraska 68701

Pursuant to Chapter 14 of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of this proposed construction of an air contaminant source and the thirty (30) day period allowed for comments has elapsed. This Construction Permit approves the proposed construction of a new ethanol manufacturing facility (SIC 2869) designed to produce approximately 53,000,000 gallons per year of denatured ethanol, 432,445 tons per year of wet distillers grain with solubles (WDGS), and 170,357 tons per year of dried distillers grain with solubles (DDGS). The facility may also produce modified wet distillers grain with solubles (MWDGS).

Compliance with this permit shall not be a defense to any enforcement action for violation of an ambient air quality standard.

This permit is issued with the following conditions:

General Conditions

- I. This permit is not transferable to another source or location. (Title 129, Chapter 17)
- II. Holding of this permit does not relieve the owner/operator of the source from the responsibility to comply with all applicable portions of the Nebraska Air Quality Regulations and any other requirements under local, State, or Federal law. (Title 129, Chapter 41)
- III. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal,



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promptly submit such supplementary facts or corrected information. If the source wishes to make changes at the facility that will result in change(s) to values, specifications, and/or locations of emission points that were indicated in the permit application (or other supplemental information provided by the applicant and reviewed by the Department in issuance of this permit), the source must receive approval from the Department before the change(s) can be made. In addition, any modification which may result in an adverse change to the air quality impacts predicted by atmospheric dispersion modeling (such as changes in stack parameters or increases in emission rates, potential emissions, or actual emissions) shall have prior approval from the Department. The source shall provide all necessary information to verify that there are no substantive changes affecting the basis upon which this permit was issued. Information may include, but not be limited to, additional engineering, modeling and ambient air quality studies. (Title 129, Chapter 17, Section 006, 007, and 008)

- IV. Approval to construct, reconstruct and/or modify the source will become invalid if a continuous program of construction is not commenced within 18 months after the date of issuance of the construction permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable period of time. (Title 129, Chapter 17, Section 012)
- V. The owner/operator of the source shall provide a notification to the Department of the date of construction, reconstruction or modification commenced, postmarked no later than 30 days after such date, and of the actual date of initial startup of operation, postmarked within 15 days after such date. (Title 129, Chapter 17, Section 012 and Chapter 7, Section 002.03)
- VI. The permittee shall allow the Department, EPA or an authorized representative, upon presentation of credentials to (Title 129, Chapter 8, Section 012.02):
- (A) Enter upon the permittee's premises at reasonable times where a source subject to this permit is located, emissions-related activity is conducted or records are kept, for the purpose of ensuring compliance with the permit or applicable requirements;
 - (B) Have access to and copy, at reasonable times, any records, for the purpose of ensuring compliance with the permit or applicable requirements;
 - (C) Inspect at reasonable times any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations, for the purpose of ensuring compliance with the permit or applicable requirements;
 - (D) Sample or monitor at reasonable times substances or parameters for the purpose of ensuring compliance with the permit or applicable requirements.
- VII. Applicable regulations: Title 129 - Nebraska Air Quality Regulations as amended September 25, 2005.
- VIII. This permit may contain abbreviations and symbols of units of measure which are defined in 40 CFR Part 60.3. Other abbreviations may include, but are not limited to, the following: Best Available Control Technology (BACT), Carbon Dioxide (CO₂), Carbon Monoxide (CO), Construction Permit (CP), Continuous Emissions Monitoring System (CEMS), Dried Distillers Grain with Solubles (DDGS), Hazardous Air Pollutant (HAP), Leak Detection and Repair (LDAR), million British Thermal Units per hour (MMBtu/hr), Modified Wet Distillers Grain

with Solubles (MWDGS), National Ambient Air Quality Standards (NAAQS), New Source Performance Standards (NSPS), Nitrogen Oxides (NO_x), Particulate Matter (PM), Particulate Matter less than or equal to 10 micrometers (PM₁₀), parts per million (ppm), Prevention of Significant Deterioration (PSD), Sulfur Dioxide (SO₂), Thermal Oxidizer/Heat Recovery Steam Generator (TO/HRSG), Volatile Organic Compounds (VOC), Wet Distillers Grain with Solubles (WDGS).

- IX. Open fires are prohibited except as allowed by Title 129, Chapter 30.
- X. The source shall not cause or permit fugitive particulate matter to become airborne in such quantities and concentrations that it remains visible in the ambient air beyond the property line. (Title 129, Chapter 32)
- XI. Application for review of plans or advice furnished by the Director will not relieve the source of legal compliance with any provision of these regulations, or prevent the Director from enforcing or implementing any provision of these regulations. (Title 129, Chapter 37)
- XII. If and when the Director declares an air pollution episode as defined in Title 129, Chapter 38, Sections 003.01B, 003.01C, or 003.01D, the source shall immediately take all required actions listed in Title 129, App. I until the Director declares the air pollution episode terminated.

Specific Conditions

- XIII. Specific terms and conditions of this permit:
 - (A) The facility shall emit less than the following in any period of twelve (12) consecutive calendar months. At no time during the first eleven (11) calendar months after the startup date shall the sum of all the previous months' emissions exceed the following emission limitations. Compliance with this condition shall be demonstrated using the testing results performed as specified in Condition XIII.(N) and emission calculation records as specified in Condition XIII.(O)(1) of this permit. (Title 129, Chapters 27 and 28)
 - (1) 100.0 tons of VOC
 - (2) 10.0 tons of any individual HAP
 - (3) 25.0 tons of total combined HAPs
 - (B) The following conditions apply to: **GRAIN HANDLING AND MILLING OPERATIONS**
 - (1) PM emissions from all grain handling and milling operations shall be captured and controlled by the grain receiving baghouse (C20) and the hammermill baghouse (C30). (Title 129, Chapters 4 and 19)
 - (2) The operation of each dry dust collector (baghouse) shall be in accordance with the following requirements: (Title 129, Chapter 34)

- (a) The dry dust collectors shall be operated at all times when the associated emission units are in operation.
 - (b) The dry dust collectors shall be properly designed, installed, operated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
 - (c) Each dry dust collector shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated dry dust collector is operating. The pressure indicator shall be properly installed, operated, calibrated and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
 - (d) Dry dust collector filter bags/cartridges are to be inspected and/or replaced according to the manufacturer's recommendations or more frequently as indicated by pressure differential indicator readings.
 - (e) Routine observations (at least once each day of dry dust collector operation) shall be conducted to determine whether there are visible emissions from the stack, leaks or noise, atypical pressure differential readings, or other indications which may necessitate corrective action. Corrective action shall be taken immediately if necessary.
 - (f) Collected waste material from the dry dust collectors shall be handled, transported, or stored in a manner that ensures compliance with Condition X.
 - (g) The source shall maintain on-site an inventory of spare bags/cartridges of each type used facility-wide to ensure rapid replacement in the event of bag/cartridge failure.
- (3) PM emissions from the grain receiving baghouse (C20) and hammermill baghouse (C30) shall not exceed the following limits (3-hour or test method average). (Title 129, Chapters 4 and 19)
- (a) C20: 1.67 pounds per hour
 - (b) C30: 1.50 pounds per hour
- (4) In order to demonstrate compliance with Condition XIII.(B)(3), the source shall conduct a performance test for PM on C20 and C30. The performance test shall be performed in accordance with Condition XIII.(N). (Title 129, Chapter 34)
- (C) The following conditions apply to: FERMENTATION OPERATIONS
- (1) VOC and HAP emissions from the fermentation units shall be controlled by a wet scrubber (C40). (Title 129, Chapters 19 and 27)

- (2) The operation of the scrubber shall be in accordance with the following requirements (Title 129, Chapter 34):
 - (a) The scrubber shall be operated at all times when the associated emission units are in operation.
 - (b) The scrubber shall be properly designed, installed, operated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
 - (c) The scrubber shall be equipped with indicators of scrubbing liquid flow rate and other operating parameters, such as pressure differential, as appropriate. Operating parameter readings shall be recorded at least once each day the scrubber is in operation. The indicators shall be properly installed, operated, calibrated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
 - (d) Routine observations (at least once each day when the scrubber is in operation) shall be conducted to determine whether there are any atypical operating parameter readings (e.g., scrubber flow rate, pressure differential), leaks, noise, or other indications of poor performance requiring corrective action. Corrective action shall be taken immediately if necessary.
- (3) The scrubber shall have a minimum control efficiency of 65 percent for acetaldehyde. (Title 129, Chapters 19 and 27)
- (4) In order to demonstrate compliance with Conditions XIII.(A) and (C)(3), the source shall conduct a performance test for VOC and HAPs on C40. In addition, the performance test shall determine the acetaldehyde control efficiency of the scrubber on C40. The performance test shall be conducted in accordance with Condition XIII.(N) and shall include speciation and quantification of the HAP composition of the emissions. VOC emissions shall be expressed as weight of VOC.
- (D) The following conditions apply to: **PRE-FERMENTATION, DISTILLATION, DRYING OPERATIONS/THERMAL OXIDIZER**
 - (1) Only natural gas and methane from the biomethanator shall be burned as fuel in the dryers. Only natural gas shall be burned as fuel in the thermal oxidizer.
 - (2) Emissions from the pre-fermentation and distillation equipment and the dryers shall be controlled by a TO/HRSG system (T01).
 - (3) Emissions from the TO/HRSG system stack (S10) shall be limited to the following: (Title 129, Chapters 4 and 19)
 - (a) 4.86 pounds per hour PM (3-hour or test method average)

- (b) 20.9 pounds per hour NO_x (30-day rolling average)
 - (c) 20.4 pounds per hour CO (3-hour or test method average)
- (4) In order to demonstrate compliance with Conditions XIII.(A) and (D)(3) and to verify the assumptions used in the permit application, the source shall conduct performance tests for PM/PM₁₀ (both filterable and condensable), CO, SO₂, VOC and HAPs on the TO/HRSG system stack (S10) while producing DDGS and while producing MWDGS. The performance test shall be conducted in accordance with Condition XIII.(N) and shall include speciation and quantification of the HAP composition of the emissions from the TO/HRSG system stack. VOC emissions shall be expressed as weight of VOC. (Title 129, Chapter 34)
- (5) Operation of the TO/HRSG system shall be in accordance with the following requirements: (Title 129, Chapters 4, 19 and 27)
- (a) The TO/HRSG system shall be operated at all times when the associated emission units are in operation.
 - (b) The one-hour average operating temperature of the TO/HRSG system shall be maintained at a minimum of 1,400 °F. Upon approval by the Department, the 1,400 °F limitation may be replaced with an alternate minimum operating temperature based on results of the most recent performance test that demonstrate compliance with Conditions XIII.(A) and (D)(3).
 - (c) The TO/HRSG system shall be equipped with a thermocouple or equivalent device capable of continuously monitoring the temperature. The thermocouple or equivalent device shall monitor temperature on a continuous basis, with the one-hour average temperature recorded once per hour. The thermocouple or equivalent device shall be properly installed, calibrated, operated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
 - (d) Routine observations (at least once each day when the TO/HRSG system is in operation) shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, atypical operating parameter readings (e.g., temperature readings below limit specified in Condition XIII.(D)(5)(b)), or other indications, which may necessitate corrective action. Corrective action shall be taken immediately if necessary.
- (6) The requirements of the NSPS in 40 CFR 60, Subparts A and Db (Title 129, Chapter 18, Sections 001.01 and 001.22) apply to the TO/HRSG system. The requirements include, but are not limited to, the following:
- (a) NO_x emissions shall not exceed 0.1 lb/MMBtu. This emission limit applies at all times including periods of startup, shutdown or malfunction.

- (b) Performance and compliance testing shall be conducted in accordance with Title 129, Chapter 18, NSPS, Section 001.01 General Provisions, and as required by 40 CFR 60.46b(e) and Condition XIII.(N).
 - (c) The permittee shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) or approved alternative in accordance with the Subpart for the TO/HRSG system measuring the NO_x emissions.
 - (d) The Requirements for Performance Specifications 2 found in 40 CFR 60 Appendix B shall be followed for the CEMS required under the Condition XIII.(D)(6)(c).
 - (e) Quality Assurance for the CEMS required under the Condition XIII.(D)(6)(c) shall be conducted according to the requirements of 40 CFR 60 Appendix F. The report of the Relative Accuracy Test Audit required by the 40 CFR 60 Appendix F or a similar procedure shall be submitted to the Department within 45 days of completion of the test.
 - (f) The source shall record and maintain records of the amount of natural gas combusted during each day unless EPA Region VII approves an alternative record-keeping frequency. (40 CFR 60.48b(d))
 - (g) The source shall submit notification of the date of construction, anticipated startup, and actual startup, as provided by Title 40 CFR 60.7. (40 CFR 60.49b(a))
- (7) The TO/HRSG system and associated drying, pre-fermentation and distillation equipment shall be properly designed, installed, operated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
- (8) In order to demonstrate compliance with Condition XIII.(A) and to verify the assumptions used in the permit application, the source shall perform analytical testing to determine the HAP content of the anhydrous ethanol produced and the VOC, HAP and liquid content of the WDGS. The performance test shall be in accordance with Condition XIII.(N).
- (E) The following conditions apply to: STORAGE TANKS
- (1) The requirements of the NSPS in 40 CFR 60, Subparts A and Kb (Title 129, Chapter 18, Sections 001.01 and 001.62) apply to the storage tanks (T61-65). The requirements include, but are not limited to, the following
 - (a) The tanks shall each be equipped with an internal floating roof, in accordance with the specifications in 40 CFR 60.112b(a)(1).
 - (b) The tanks shall each be visibly inspected and repaired in accordance with testing and procedures per 40 CFR 60.113b(a).

- (c) The owner or operator of the affected tanks shall report and keep records as described in 40 CFR 60.115b – Reporting and record keeping requirements and in 40 CFR 60.116b – Monitoring of operations.

(F) The following conditions apply to: LIQUID PRODUCT LOADING

- (1) The source shall use submerged loading when transferring liquid product from the storage tanks to tanker railcar or tanker truck. (Title 129, Chapters 19 and 27)
- (2) Truck loadout of liquid product shall be controlled by a vapor recovery system with a flare at all times product loadout is occurring. (Title 129, Chapters 19 and 27)
 - (a) The vapor recovery system shall be properly installed, calibrated, operated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
 - (b) When truck loadout is occurring, a flame shall be present at the flare. The facility must install an appropriate safety device or flame monitoring system to ensure that truck loadout cannot occur without the presence of a flame. The installed safety device or monitoring system shall be properly installed, operated, calibrated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
- (3) The truck loadout flare shall not exceed 2,080 operating hours per any period of twelve (12) consecutive calendar months. At no time during the first eleven (11) calendar months after the startup date shall the sum of all the previous months' operating hours exceed 2,080 hours. (Title 129, Chapter 19)
- (4) The truck loadout flare shall be equipped with an hour meter to record the operating hours to determine compliance with Condition XIII.(F)(3). The hour meter shall be properly installed, operated, calibrated, and maintained. Manufacturer's documentation shall be kept on-site and readily available to Department representatives.

(G) The following conditions apply to: FUGITIVE EMISSIONS

- (1) The requirements of the NSPS in 40 CFR 60, Subparts A and VV (Title 129, Chapter 18, Sections 001.01 and 001.14) apply to all affected equipment used in the ethanol production processes. The requirements include, but are not limited to, the following:
 - (a) Compliance with NSPS, Subpart VV shall be demonstrated for all equipment within 180 days of initial startup. (40 CFR 60.482-1)
 - (b) Test methods and procedures shall be consistent with the requirements found in 40 CFR 60.485. The methods include:

- (i) Method 21 shall be used to determine the presence of leaking sources. (40 CFR 60.485(b)(1))
 - (ii) Method 21 shall be used to determine the background level. (40 CFR 60.485(c)(2))
 - (iii) Procedures that conform to the general methods in ASTM E-260, E-168, E-169 (incorporated by reference – see § 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment. (40 CFR 60.485(d)(1))
 - (iv) Standard reference texts or ASTM D-2879 (incorporated by reference – see § 60.17) shall be used to determine the vapor pressure of the components in the liquid in the light liquid service. (40 CFR 60.485(e)(1))
- (c) The owner or operator shall report and keep records as described in 40 CFR 60.487 – Reporting requirements and in 40 CFR 60.486 – Recordkeeping requirements. Each owner or operator shall submit semiannual reports to the Department beginning six months after the initial startup date.
- (d) Equipment subject to 40 CFR 60 Subpart VV is defined as 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 required by Subpart VV. (40 CFR 60.481)
- (e) Emissions shall be controlled by the Leak Detection and Repair Program as defined in 40 CFR 60.482-1 through 60.482-10.
- (2) All on-site haul roads with production-related truck traffic shall be paved. The haul roads shall comply with the following conditions: (Title 129, Chapters 4 and 19)
- (a) The owner or operator shall implement all reasonable measures to control emissions from haul roads to comply with Condition X, including, but not limited to, watering and/or sweeping of the haul roads as necessary. (Title 129, Chapters 4, 19 and 32)
 - (b) For each day of operation, the owner or operator shall conduct a survey of the plant property and haul roads to determine if visible fugitive emissions are being generated. Implementation of fugitive dust control measures shall be taken upon observation of visible fugitive emissions. Documentation of all fugitive dust control measures shall be maintained in a log. (Title 129, Chapters 4, 19 and 32)
- (H) The following conditions apply to: COOLING TOWER

- (1) The cooling tower shall be properly installed, operated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
 - (2) The drift loss shall not exceed 0.005 percent. Verification of drift loss should be by manufacturer's guarantee. Manufacturer's drift loss guarantee shall be kept on site and readily available to Department representatives. (Title 129, Chapters 4 and 19)
 - (3) The total dissolved solids concentration (TDS) in the cooling water shall not exceed 2,500 ppm for any single sampling event. A TDS sample will be collected and tested at a minimum of once per calendar month. (Title 129, Chapters 4 and 19)
- (I) The following conditions apply to: BIOMETHANATOR OPERATION
- (1) Methane generated from the biomethanator shall be combusted in the flare or the dryers. (Title 129, Chapters 19 and 27)
 - (2) The wastewater treatment tanks, biomethanator and the flare shall be properly designed, installed, operated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
 - (3) The source shall install an appropriate safety device or flame monitoring system to ensure that biomethanator off-gasses are not vented to the atmosphere. The safety device or flame monitoring system shall be properly installed, operated, calibrated, and maintained. Manufacturers' documentation shall be kept on site and readily available to Department representatives.
- (J) The following conditions apply to: EMERGENCY EQUIPMENT
- (1) The emergency fire water-pump engine shall not exceed 500 operating hours per any period of twelve (12) consecutive calendar months. At no time during the first eleven (11) months after the startup date shall the sum of all the previous months' operating hours exceed 500 hours (Title 129, Chapter 4 and 19)
 - (2) Only distillate fuel oil (No. 1 and No. 2) is permitted to be combusted in the emergency fire water-pump engine. (Title 129, Chapters 4 and 19)
 - (3) The emergency fire water-pump engine shall be equipped with an hour meter to record the operating hours to determine compliance with Condition XIII.(J)(1). The hour meter shall be properly, installed, operated, calibrated, and maintained. Manufacturers' documentation shall be kept on site and readily available to Department representatives.
- (K) The following conditions apply to: DDGS COOLING CYCLONE
- (1) PM and PM₁₀ emissions from the DDGS cooling cyclone (S70) shall not exceed 1.89 pounds per hour (3-hour or test method average). (Title 129, Chapters 4 and 19)

- (2) Operation of the DDGS cooling cyclone shall be in accordance with the following requirements: (Title 129, Chapters 4 and 19)
- (a) The cyclone shall be properly installed, operated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
 - (b) The cyclone shall be equipped with an operational pressure drop instrumentation and shall be properly installed, calibrated, operated, and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives. The pressure drop readings shall be recorded at a minimum of once per day when the cyclone is in operation.
 - (c) In order to demonstrate compliance with Conditions XIII.(A) and (K)(1) and to verify the assumptions used in the permit application, the source shall conduct a performance test for PM/PM₁₀ (both filterable and condensable), VOC and HAPs on the DDGS cooling cyclone (S70). The performance test shall be conducted in accordance with Condition XIII.(N) and shall include speciation and quantification of the HAP composition of the emissions from the DDGS cooling cyclone. (Title 129, Chapter 34)
 - (d) Routine observations (at least once each day the cyclone is in operation) shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, atypical operating parameter readings (e.g., pressure differential readings), or other indications, which may necessitate corrective action. Corrective action shall be taken immediately if necessary.
 - (e) Collected waste material from the cyclone shall be handled, transported, and stored in a manner that ensures compliance with Condition X.

(L) The following conditions apply to: DDGS STORAGE AND LOADOUT

- (1) PM and PM₁₀ emissions from DDGS storage and loadout shall be captured and controlled by a baghouse (S90). (Title 129, Chapters 4 and 19)
- (2) The operation of the dry dust collector (baghouse) shall be in accordance with the following requirements: (Title 129, Chapter 34)
 - (a) The dry dust collector shall be operated at all times the associated emission unit is in operation.
 - (b) The dry dust collector shall be properly designed, installed, operated and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.

- (c) The dry dust collector shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated dry dust collector is operating. The pressure indicator shall be properly installed, operated, calibrated and maintained. Manufacturer's documentation shall be kept on site and readily available to Department representatives.
 - (d) Dry dust collector filter bags/cartridges are to be inspected and/or replaced according to the manufacturer's recommendations or more frequently as indicated by pressure differential indicator readings.
 - (e) Routine observations (at least once each day of dry dust collector operation) shall be conducted to determine whether there are visible emissions from the stack, leaks or noise, atypical pressure differential readings, or other indications which may necessitate corrective action. Corrective action shall be taken immediately if necessary.
 - (f) Collected waste material from the dry dust collector shall be handled, transported, or stored in a manner that ensures compliance with Condition X.
 - (g) The source shall maintain on-site an inventory of spare bags/cartridges of each type used facility-wide to ensure rapid replacement in the event of bag/cartridge failure.
- (3) PM and PM₁₀ emissions from the DDGS storage and loadout baghouse (S90) shall not exceed 0.32 pounds per hour (3-hour or test method average). (Title 129, Chapters 4 and 19)
 - (4) In order to demonstrate compliance with Condition XIII.(L)(3), the source shall conduct a performance test for PM and PM₁₀ on the DDGS loadout baghouse (S90). The performance test shall be conducted in accordance with Condition XIII.(N). (Title 129, Chapter 34)
- (M) The following conditions apply to the verification of NAAQS modeling analysis: (Title 129, Chapter 4)
- (1) Stack heights shall not be less than the following heights above ground level:

| Emission Point | Minimum Stack Height (ft) |
|--------------------------------------|----------------------------------|
| Unit #S10 (TO/HRSG system stack) | 125 |
| Unit #S20 (grain receiving baghouse) | 40 |
| Unit #S30 (hammermill baghouse) | 40 |
| Unit #S80 (cooling tower) | 28 |
| Unit #S70 (DDGS cooling cyclone) | 135 |
| Unit #S90 (DDGS loading baghouse) | 40 |

- (2) The source shall sufficiently restrict public access to the facility at the ambient air boundary relied upon in the modeling analysis for the NAAQS compliance demonstration. An ambient air restriction plan detailing the measures for restricting public access (such as fencing) shall be submitted to the Department at least 90 days prior to initial startup of operations. The public access restrictions must be in place prior to initial startup of operations.
 - (3) A site survey or similar documentation demonstrating compliance with the stack height limitations per Condition XIII.(M)(1) shall be kept on site and readily available to Department representatives within 180 days after startup of operations; or for any new emission unit constructed after this date, within 180 days following start-up of the new emissions unit.
 - (4) A site survey or similar documentation demonstrating compliance with the restricted public access provisions per Condition XIII.(M)(2) shall be kept on site and readily available to Department representatives within 180 days after startup of operations. The site survey or similar documentation shall provide sufficient detail to verify that the ambient air restriction plan was fully implemented.
- (N) The performance tests required in the permit must be completed and submitted to the Department as follows: (Title 129, Chapter 34)
- (1) Unless otherwise specified in this permit, the performance tests shall be conducted while operating at full capacity within 60 days after reaching the maximum capacity but not more than 180 days after the start-up of operations. In addition, testing of the TO/HRSG system stack (S10) during production of DDGS or MWDGS shall only be required once the source has begun production of DDGS or MWDGS, respectively.
 - (2) Testing methods shall be from 40 CFR 60 Appendix A, or other method approved by the NDEQ.
 - (3) An emission testing protocol shall be submitted to the Department at least 45 days prior to testing.
 - (4) The owner or operator of a source shall provide the Department 30 days notice prior to testing to afford the Department an opportunity to have an observer present.
 - (5) The permittee shall monitor the operating parameters for process and control equipment during the performance testing required in the permit (e.g., production rate, liquid flow rate and pressure differential during testing of the scrubber). The operating parameters shall be submitted with the test results.
 - (6) Unless otherwise specified in this permit, a certified written copy of the test results shall be provided to the Department within 45 days of completion of the test.

(O) The following conditions apply to: MONITORING AND RELATED RECORDKEEPING AND REPORTING REQUIREMENTS

Records of all limits, measurements, results, inspections, and observations listed in Conditions XIII.(A) through XIII.(N), as required to ensure compliance with this permit shall be maintained. Calculations and records shall be completed no later than the 15th day of each calendar month and shall include all information through the previous calendar month. Records shall be kept on-site for a minimum of five years unless otherwise specified in this permit. These records shall be clear and readily accessible to Department representatives and shall include the following:

- (1) Emission calculations verifying compliance with Condition XIII.(A), performed in accordance with the emission calculation methodology specified in Attachment A of this permit. The permittee shall keep appropriate records to support the emission calculations including, but are not limited to, actual material throughput rates, production rates, fuel usage rates, and operating hours.
- (2) Inspection and maintenance records for the grain receiving baghouse and the milling baghouse to show compliance with Condition XIII.(B)(2), shall include the following:
 - (a) Records documenting when routine observations were conducted with a description, including operating parameters (e.g., pressure differential readings) and any atypical observations.
 - (b) Records documenting when routine maintenance and preventive actions were conducted with a description of the maintenance and/or preventive action conducted.
 - (c) Filter replacement records including filter position, type, and date of filter installation.
 - (d) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.
- (3) Inspection and maintenance records for the CO₂ scrubber, to show compliance with Condition XIII.(C)(2), shall include the following:
 - (a) Records documenting when routine observations were conducted with a description, including operating parameters (e.g., pressure differential readings, scrubbant flow rates) and any atypical observations.
 - (b) Records documenting when routine maintenance and preventive actions were conducted with a description of the maintenance and/or preventive action conducted.
 - (c) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.

- (4) Operation and maintenance records for the TO/HRSG system and associated drying, pre-fermentation and distillation equipment, to show compliance with Condition XIII.(D)(5), (6) and (7), shall include the following:
 - (a) Records documenting the temperature of the TO/HRSG system, including hourly temperature readings while the drying, pre-fermentation and distillation equipment are in operation to demonstrate compliance with Condition XIII.(D)(5)(b).
 - (b) Records documenting when routine observations were conducted with a description, including operating parameters (e.g., temperature) and any atypical observations.
 - (c) Records documenting when routine maintenance and preventive actions were conducted with a description of the maintenance and/or preventive action conducted.
 - (d) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.
- (5) As designated in Title 129, Chapter 18, Section 001.22, New Source Performance Standards (NSPS), Industrial – Commercial – Institutional Steam Generating Units – Subpart Db, Reporting and Recordkeeping Requirements to show compliance with Condition XIII.(D)(6).
- (6) As designated in Title 129, Chapter 18, Section 001.62, New Source Performance Standards (NSPS), Volatile Organic Liquid Storage Vessels (including petroleum storage vessels) – Subpart Kb, Reporting and Record keeping Requirements to show compliance with Condition XIII.(E)(1).
- (7) Inspection and maintenance record for the vapor recovery system and flare for the truck loadout facility, to show compliance with Condition XIII.(F)(2), shall include the following:
 - (a) Records documenting when routine maintenance and preventive actions were conducted with a description of the maintenance and/or preventive action conducted.
 - (b) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.
- (8) Hours of operation for the truck loadout flare to show compliance with Condition XIII.(F)(3).
- (9) As designated in Title 129, Chapter 18, Section 001.14, New Source Performance Standards (NSPS), Equipment Leaks of VOC in the Synthetic

Organic Chemical Manufacturing Industry – Subpart VV, Recordkeeping Requirements to show compliance with Condition XIII.(G)(1).

- (10) Records of the type and frequency of fugitive emission control measures, and records of surveys of the plant property for visible fugitive emissions taken daily during operation and a description of corrective action taken to show compliance with Condition XIII.(G)(2).
- (11) Operation and maintenance records for the cooling tower, to show compliance with Condition XIII.(H)(1), shall include the following:
 - (a) Records documenting when routine maintenance and preventive actions were conducted with a description of the maintenance and/or preventive action conducted.
 - (b) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.
- (12) Manufacturer's drift loss guarantee to show compliance with Condition XIII.(H)(2). This record shall be kept for the life of the equipment.
- (13) TDS concentration in the cooling tower water for each sampling event to show compliance with Condition XIII.(H)(3).
- (14) Inspection and maintenance record for the wastewater treatment tanks, biomethanator, and flare, to show compliance with Conditions XIII.(I)(2) and (I)(3), shall include the following:
 - (a) Records documenting when routine maintenance and preventive actions were conducted with a description of the maintenance and/or preventive action conducted.
 - (b) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.
- (15) Hours of operation for the emergency fire water-pump to show compliance with Condition XIII.(J)(1).
- (16) Fuel receipts for the distillate fuel oil from the supplier to show compliance with Condition XIII.(J)(2).
- (17) Inspection and maintenance records for the DDGS cooling cyclone to show compliance with Condition XIII.(K)(2), shall include the following:
 - (a) Records documenting when routine observations were conducted with a description, including operating parameters (e.g., pressure differential readings) and any atypical observations.

- (b) Records documenting when routine maintenance and preventive actions were conducted with a description of the maintenance and/or preventive action conducted.
 - (c) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.
- (18) Inspection and maintenance records for the DDGS loadout baghouse to show compliance with Condition XIII.(L)(2), shall include the following:
- (a) Records documenting when routine observations were conducted with a description, including operating parameters (e.g., pressure differential readings) and any atypical observations.
 - (b) Records documenting when routine maintenance and preventive actions were conducted with a description of the maintenance and/or preventive action conducted.
 - (c) Filter replacement records including filter position, type, and date of filter installation.
 - (d) Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.
- (19) A site survey or similar documentation demonstrating compliance with the stack height limitations per Condition XIII.(M)(1) and the public access restrictions per Condition XIII.(M)(2). These records shall be kept for the life of the equipment.
- (20) Calibration records for all operating parameter monitoring equipment as applicable.
- (21) Copies of all notifications, reports, plans, and test results submitted to the Department.
- (22) Manufacturer's documentation regarding design, installation, operation, and maintenance for all permitted equipment. These records shall be kept for the life of the equipment.

The undersigned issues this document on behalf of the Director in accordance with Title 129 – Nebraska Air Quality Regulations.

9/29/05
Date


Shelley Kaderly, Air Administrator
Air Quality Division

ATTACHMENT A
EMISSION CALCULATION METHODOLOGY

To demonstrate compliance with the emission limits specified in Condition XIII.(A), emissions shall be calculated each calendar month using data from the following sources listed in descending order of preference. For compliance purposes, total HAP is equivalent to the sum of individual HAPs.

1. Most recent valid performance test results
2. Manufacturer's guarantees and Material Safety Data Sheet (MSDS)
3. Manufacturer/engineering estimates
4. Emission factors from AP-42 or other EPA published documents

If it is necessary to convert uncontrolled to controlled emissions, multiply the uncontrolled emissions by one minus the overall control efficiency (fraction) of the control equipment.

Fermentation Operations {Condition XIII.(C)}

Emissions from fermentation operations shall be calculated using Equations 1 or 2.

$$C40 = (C40P) \times (C40F) / (2,000 \text{ lbs/ton}) \tag{1}$$

Where
 C40 = Emissions from fermentation operations (tons/month)
 C40P = Production of ethanol (gallons/month)
 C40F = Controlled fermentation emission factor (lbs/gallon)

$$C40 = (CC40) \times (OHC40) / (2,000 \text{ lbs/ton}) \tag{2}$$

Where:
 C40 = Emissions from fermentation operations (tons/month)
 CC40 = Controlled process emissions from fermentation operations (lbs/hr)
 OHC40 = Operating hours of fermentation operations (hrs/month)

Drying Operations/Thermal Oxidizer, Pre-Fermentation and Distillation Operations {Condition XIII.(D)}

Emissions from the thermal oxidizer stack (S10) shall be calculated using Equations 3a.1, 3a.2, 3b.1, 3b.2, or 3c.

$$S10 = (EF-S10DHR) \times (OH-S10) / (2,000 \text{ lbs/ton}) \tag{3a.1}$$

Where:
 S10 = Emissions from thermal oxidizer (tons/month)
 EF-S10DHR = Controlled emissions from DDGS production (lbs/hr)
 OH-S10 = Operating hours of DDGS drying (hrs/month)

$$S10 = (EF-S10MHR) \times (OH-S10) / (2,000 \text{ lbs/ton}) \tag{3a.2}$$

Where:
 S10 = Emissions from thermal oxidizer (tons/month)
 EF-S10MHR = Controlled emissions from MWDGS production (lbs/hr)
 OH-S10 = Operating hours of MWDGS drying (hrs/month)

$$S10 = (EF-S10DTON) \times (S10D) / (2000 \text{ lbs/ton}) \tag{3b.1}$$

Where: S10 = Emissions from thermal oxidizer (tons/month)
 EF-S10DTON = Emissions from thermal oxidizer stack (lbs/ton of DDGS produced)
 S10D = DDGS production rate (tons/month)

$$S10 = (EF-S10MTON) \times (S10M) / (2000 \text{ lbs/ton}) \quad (3b.2)$$

Where: S10 = Emissions from thermal oxidizer (tons/month)
 EF-S10MTON = Emissions from thermal oxidizer stack (lbs/ton of MWDGS produced)
 S10M = MWDGS production rate (tons/month)

$$S10 = S10A + S10B \quad \{\text{Use if both MWDGS and DDGS produced in a single month}\} \quad (3c)$$

Where S10 = Process emissions from DDGS dryers (tons/month)
 S10A = Process emissions from DDGS drying (tons/month), using Equation 3a.1 or 3b.1
 S10B = Process emissions from MWDGS drying (tons/month), using Equation 3a.2 or 3b.2

Storage Tanks {Condition XIII.(E)}

VOC emission from storage tanks shall be calculated using the EPA's TANKS program. HAP emissions from the storage tanks shall be calculated using Equation 4.

$$T6i_{HAP} = (T6i_{VOC}) \times (PPM-T6i/10^6) \quad (4)$$

Where: i = 1, 2, 3, 4 or 5
 T6i,VOC = VOC emissions from storage tank T6i (tons/month)
 PPM-T6i = HAP content of material stored in tank T6i (ppm by weight)

Liquid Product Loadout {Condition XIII.(F)}

VOC emissions from liquid product loadout shall be calculated using Equation 5. HAP emissions from liquid product loadout shall be calculated using Equation 6.

$$LR_{VOC} = TLR_{VOC} + RLR_{VOC} \quad (5)$$

Truck loadout emissions (TLR,VOC) shall be calculated using Equations 5a.1 or 5a.2

$$TLR_{VOC} = \{(12.46) \times (S) \times (P) \times (M)/(T)\} \times \{1 - [(CAE-LR/100) \times (COE-LR/100)]\} \times (TQLR) / (2,000 \text{ lbs/ton}) \quad (5a.1)$$

Where: TLR,VOC = VOC emissions from ethanol product loadout to trucks (tons/month)
 S = Saturation factor
 P = Vapor pressure of denatured ethanol product for dedicated ethanol trucks or vapor pressure of gasoline for trucks previously carrying gasoline (psia)
 M = Molecular weight of denatured ethanol product for dedicated ethanol trucks or molecular weight of gasoline for trucks previously carrying gasoline (lb/lbmole)
 T = Temperature of denatured ethanol product for dedicated ethanol trucks or temperature of gasoline for trucks previously carrying gasoline (°R)
 CAE-LR = Capture efficiency of the vapor collection system (%)

COE-LR= Control efficiency of the flare or equivalent control device (%)
TQLR = Denatured ethanol product loadout rate to trucks (Mgal/month)

$$TLR_{,VOC} = \{(12.46) \times (S) \times (P) \times (M)/(T)\} \times \{1-(OCE-LR/100)\} \times (TQLR) / (2,000 \text{ lbs/ton}) \quad (5a.2)$$

Where: $TLR_{,VOC}$ = VOC emissions from ethanol product loadout to trucks (tons/month)
S = Saturation factor
P = Vapor pressure of denatured ethanol product for dedicated ethanol trucks or vapor pressure of gasoline for trucks previously carrying gasoline (psia)
M = Molecular weight of denatured ethanol product for dedicated ethanol trucks or molecular weight of gasoline for trucks previously carrying gasoline (lb/lbmole)
T = Temperature of denatured ethanol product for dedicated ethanol trucks or temperature of gasoline for trucks previously carrying gasoline (°R)
OCE-LR = Overall capture/control efficiency of the vapor collection system with flare or equivalent control device (%)
TQLR = Denatured ethanol product loadout rate to trucks (Mgal/month)

Rail loadout emissions ($RLR_{,VOC}$) shall be calculated using Equation 5b.

$$RLR_{,VOC} = \{(12.46) \times (S) \times (P) \times (M)/(T)\} \times (RQLR) / (2,000 \text{ lbs/ton}) \quad (5b)$$

Where: $RLR_{,VOC}$ = VOC emissions from ethanol product loadout to railcars (tons/month)
S = Saturation factor
P = Vapor pressure of denatured ethanol product for dedicated ethanol railcars (psia)
M = Molecular weight of denatured ethanol product for dedicated ethanol railcars (lb/lbmole)
T = Temperature of denatured ethanol product for dedicated ethanol railcars (°R)
RQLR = Denatured ethanol product loadout rate to railcars (Mgal/month)

$$LR_{,HAP} = RLR_{,HAP} + TLR_{,HAP} \quad (6)$$

Rail loadout HAP emissions ($RLR_{,HAP}$) shall be calculated using Equation 6a.1.

$$RLR_{,HAP} = (RLR_{,VOC}) \times (PPM-RLR/10^6) \quad (6a.1)$$

Where: $RLR_{,HAP}$ = HAP emissions from ethanol product loadout via rail (tons/month)
 $RLR_{,VOC}$ = VOC emissions from ethanol product loadout via rail (tons/month)
PPM-RLR = HAP content of denatured ethanol product for dedicated ethanol railcars (ppm by weight)

Truck loadout HAP emissions ($TLR_{,HAP}$) shall be calculated using Equation 6a.2.

$$TLR_{,HAP} = (TLR_{,VOC}) \times (PPM-TLR/10^6) \quad (6a.2)$$

Where: $TLR_{,HAP}$ = HAP emissions from ethanol product loadout via truck (tons/month)
 $TLR_{,VOC}$ = VOC emissions from ethanol product loadout via truck (tons/month)
PPM-TLR = HAP content of denatured ethanol product for dedicated trucks or HAP content of gasoline for trucks previously carrying gasoline (ppm by weight)

Fugitive Emissions {Condition XIII.(G)}

Equipment Leaks

VOC emissions from equipment leaks shall be calculated using Equation 7. HAP emissions from equipment leaks shall be calculated using Equation 8. These equations are based on compliance with the LDAR program.

$$LK_{, \text{VOC}} = \{\Sigma[(N-LK) \times (EF-LK) \times (1-(CE-LK/100))]\} \times (OH-LK) \times (2.21 \text{ lbs/kg}) / (2,000 \text{ lbs/ton}) \quad (7)$$

Where: $LK_{, \text{VOC}}$ = VOC emissions from equipment leaks (tons/month)
 Σ = Summation over all types of components
N-LK = Number of components in each type
EF-LK = Equipment leak emission factor (kg/hr/source)
CE-LK = Control efficiency of LDAR system (%)
OH-LK = Operating hours = 720 or 744 (hrs/month)

$$LK_{, \text{HAP}} = (LK_{, \text{VOC}}) \times (\text{PPM-LK}/10^6) \quad (8)$$

Where: $LK_{, \text{HAP}}$ = HAP emissions from equipment leaks (tons/month)
 $LK_{, \text{VOC}}$ = VOC emissions from equipment leaks (tons/month)
PPM-LK = HAP content of anhydrous ethanol product

Biomethanator Operation {Condition XIII.(I)}

Emissions from biomethanator flare shall be calculated using Equation 9.

$$BF = (FE-BF) \times (FQ-BF) \times (H-BF) / (2000 \text{ lbs/ton}) \quad (9)$$

Where: BF = Emissions from biomethanator flare (tons/month)
FE-BF = Flare emission factor (lb/MMBtu)
FQ-BF = Methane usage rate in the flare (MMscf/month)
H-BF = Heat content of methane (MMBtu/MMscf)

Emergency Equipment {Condition XIII.(J)}

Fuel combustion emissions from the emergency equipment shall be calculated using Equation 10.

$$EQ = (FE-EQ) \times (EQ-HP) \times (OH-EQ) / (2,000 \text{ lbs/ton}) \quad (10)$$

Where: EQ = Fuel combustion emissions from emergency equipment (tons/month)
EQ-HP = Emergency equipment rating (hp)
FE-EQ = Fuel combustion emission factor (lb/hp-hr)
OH-EQ = Operating hours of emergency equipment (hrs/month)

DDGS Cooling Cyclone {Condition XIII.(K)}

Emissions from the DDGS cooling cyclone (S70) shall be calculated using Equations 11a or 11b.

$$S70 = (CEF70) \times (OH70) / (2,000 \text{ lbs/ton}) \quad (11a)$$

Where: C70 = Emissions from DDGS cooling cyclone (tons/month)
CEF70= Controlled emissions from DDGS cooling cyclone (lbs/hr)
OH70 = Operating hours of DDGS cooling cyclone (hrs/month)

$$S70 = (EF-S70C) \times (S70P) / (2000 \text{ lbs/ton}) \quad (11b)$$

Where: S70 = Emissions from DDGS cooling cyclone (tons/month)
EF-S70C = Controlled emissions from DDGS cooling cyclone (lbs/ton of DDGS)
S70P = DDGS cooling rate (tons/month)

Wet Cake Storage {Condition XIII.(D)(8)}

Emissions from Wet Cake Storage shall be calculated using Equation 12.

$$E\text{-CAKE} = (T) \times (L) \times (W) \times (D) \times (M/100) \times (PPM/10^6) \times (OD) / (2,000 \text{ lbs/ton}) \quad (12)$$

Where: E-CAKE = Emissions from wet cake storage (tons/month)
T= Average thickness of wet cake storage pile that will dry (ft)
L = Average length of wet cake storage pile (ft)
W = Average width of wet cake storage pile (ft)
D = Density of wet cake (lbs/ft³)
M = Liquid content of wet cake (% by weight)
PPM = VOC or HAP content of wet cake liquid (ppm by weight)
OD = Number of days wet cake storage pile exists on site (days/month)



Dave Heineman
Governor

STATE OF NEBRASKA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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AIR QUALITY CONSTRUCTION PERMIT

PERMIT NUMBER: CP08-018j

Facility Name: Elkhorn Valley Ethanol LLC

NDEQ Facility ID#: 84534

Mailing Address: 3002 N Victory Rd, Norfolk, NE

Facility Location: Norfolk, NE

Standard Industrial Classification (SIC) Code: 2869, Industrial Organic Chemicals

REOPEN FOR CAUSE PERMIT REVISION to: Construction Permit Issued September 29, 2005

This construction permit: standardizes the testing requirements with those of similar ethanol production facilities; places additional control requirements on the emissions originating from the fermentation process; standardizes the monitoring and recordkeeping requirements with those of similar ethanol production facilities; requires that the scrubbing liquid and chemical addition flow rates be continuously recorded; and provides for a compliance schedule for the installation of new equipment. No other terms or conditions of construction permit issued on September 29, 2005 are being revised or otherwise modified by this permit. All other provisions of the original permit are still in effect, and in concert with this permit, constitute the effective construction permit.

Additional details of the revision can be found in the accompanying Fact Sheet.

Pursuant to Chapter 14 and Chapter 15 of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of this reopen for cause permit revision and the fifteen (15) day period allowed for comments has elapsed.

The undersigned issues this permit on behalf of the Director under the authority of Title 129 – Nebraska Air Quality Regulations as amended February 16, 2008.

5/8/08
Date


Shelley Kaderly, Air Administrator
Air Quality Division

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I. ABBREVIATIONS, SYMBOLS, and UNITS OF MEASURE

| | | | |
|------------------|--|-------------------|--|
| AP-42 | Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources | NAAQS NDEQ | National Ambient Air Quality Standards Nebraska Department of Environmental Quality |
| BACT | Best Available Control Technology | NESHAP | National Emission Standards for Hazardous Air Pollutants |
| bhp | Brake Horsepower | NO ₂ | Nitrogen Dioxide |
| Btu | British Thermal Unit | NO _x | Nitrogen Oxides |
| bu | Bushel | NSPS | New Source Performance Standard |
| CAA | Clean Air Act | NSR | New Source Review |
| CE | Control Equipment | | |
| CEM | Continuous Emissions Monitor | PAL | Plant-wide Applicability Limit |
| CEMS | Continuous Emissions Monitoring System | Pb | Lead |
| cf | Cubic feet | PbR | Permit-by-Rule |
| CFR | Code of Federal Regulations | PE | Professional Engineer |
| CO | Carbon Monoxide | PM | Particulate Matter |
| CO ₂ | Carbon Dioxide | PM ₁₀ | Particulate Matter with and aerodynamic diameter equal to or less than 10 microns |
| CP | Construction Permit | PM _{2.5} | Particulate Matter with and aerodynamic diameter equal to or less than 2.5 microns |
| DDGS | Dry Distillers Grains with Solubles | ppb | Parts per Billion |
| dscf | Dry Standard Cubic feet | ppm | Parts per Million |
| dscfm | Dry Standard Cubic feet per minute | ppmv | Parts per Million by Volume |
| EMIS | Emergency Management Information System | PSD | Prevention of Significant Deterioration |
| EPA | Environmental Protection Agency | PTE | Potential to Emit |
| EQC | Environmental Quality Council | | |
| EP | Emission Point | RATA | Relative Accuracy Test Audit |
| ESP | Electrostatic Precipitator | RMP | Risk Management Plant |
| EU | Emission Unit | RTO | Regenerative Thermal Oxidizer |
| FGR | Flue Gas Recirculation | scf | Standard Cubic Feet |
| FIP | Federal Implementation Plan | SIC | Standard Industrial Classification |
| FR | Federal Register | SIP | State Implementation Plan |
| ft | Feet | SO ₂ | Sulfur Dioxide |
| FTIR | Fourier Transform Infrared | SO _x | Sulfur Oxides |
| GACT | Generally Available Control Technology | TDS | Total Dissolved Solids |
| H ₂ S | Hydrogen Sulfide | TO | Thermal Oxidizer |
| HAP | Hazardous Air Pollutant | tpy | Tons per year |
| HC | Hydrocarbon | TRS | Total Reduced Sulfur |
| HP | Horsepower | TSP | Total Suspended Particulate Matter |
| hr | Hour | ULNB | Ultra Low NO _x Burner |
| LDAR | Leak Detection and Repair | UST | Underground Storage Tank |
| LNB | Low NO _x Burner | UTM | Universal Transverse Mercator |
| MACT | Maximum Achievable Control Technology | VHAP | Volatile Hazardous Air Pollutant |
| Mgal | One thousand gallons | VMT | Vehicle Miles Traveled |
| MMBtu | Million British Thermal Units | VOC | Volatile Organic Compound |
| MMscf | One million standard cubic feet | | |
| MSDS | Material Safety Data Sheet | | |
| MW | Megawatt | | |

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II. SPECIFIC CONDITIONS

- (A) Testing: Performance tests, when required by NDEQ, shall be completed and submitted to the NDEQ as follows: (Title 129, Chapter 34)
- (1) Performance tests shall be conducted while operating at full capacity, unless otherwise specified by the NDEQ.
 - (2) Testing shall be conducted according to the methodologies found in Title 129, Chapter 34, Section 002, or other NDEQ approved methodologies.
 - (3) Performance tests shall be conducted for a minimum of three (3) one-hour runs unless another run-time is specified by the applicable Subpart or as deemed appropriate by the NDEQ.
 - (4) The owner or operator of a source shall provide the NDEQ at least thirty (30) days written notice prior to testing to afford the NDEQ an opportunity to have an observer present.
 - (5) The owner or operator shall provide the NDEQ with an emissions testing protocol at least thirty (30) days prior to testing.
 - (6) The owner or operator shall monitor and record the operating parameters for process and control equipment during the performance testing required in the permit.
 - (7) A written copy of the test results, signed by the person conducting the test, shall be provided to the NDEQ within forty-five (45) days of completion of the test and will, at a minimum, contain the following items:
 - i. A description of the source's operating parameters (i.e., production rates, firing rates or combustion equipment, fuel usage, etc.) control equipment parameters (i.e., baghouse fan speeds, scrubber liquid flow rates, chemical addition flow rates (if used), etc.), and ambient conditions (i.e., weather conditions, etc.) during testing.
 - ii. Copies of all data sheets from the test run(s)
 - iii. A description and explanation of any erroneous data or unusual circumstance(s) and the cause for such situation
 - iv. A final conclusion section describing the outcome of the testing

III.(A) Specific Conditions for Fermentation

- (1) Permitted Emission Points: The emission points and associated emission units identified in the following table:

| Required Control Equipment Description | Emission Unit Description |
|--|----------------------------------|
| Wet Scrubber with chemical injection. Chemical addition is not required provided the requirements of Section III.(A)(3)(b) are met. | Fermentation Tanks |

- (2) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point established in the permit referenced on the signature page of this permit are not changed and shall not be exceeded. Performance testing, if required in the above referenced permit, shall be conducted in accordance with the above referenced permit and Specific Condition II.(A).

- (3) Operational and Monitoring Requirements and Limitations:

Except as provided below, all operational and monitoring requirements and limitations in the permit referenced on the signature page of this permit are still in effect.

- (a) The emissions from the fermentation process shall be controlled through the use of a wet scrubber with chemical addition. {Chapter 17 and Chapter 27}
- (b) The source may demonstrate through testing performed in accordance with Condition II.(A), or the use of a CEMS, that chemical addition is not necessary. Testing completed within the 12 month period preceding the issuance date of this permit, and approved by the NDEQ, may be used to demonstrate chemical addition is not necessary. {Chapter 17, Chapter 27, and Chapter 34}

- (4) Applicable NSPS, NESHAP, and MACT Requirements:

The applicable NSPS, NESHAP, and MACT requirements established in the permit referenced on the signature page of this permit are applicable.

- (5) Reporting and Recordkeeping Requirements:

Except as provided below, all reporting and recordkeeping requirements in the permit referenced on the signature page of this permit are still in effect.

- (a) Operation and maintenance of each fermentation scrubber shall be in accordance with the following requirements: {Chapters 17 and 27}
 - (i) The scrubber shall be operated and be controlling emissions at all times when the associated emission units are in operation.

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- (ii) The scrubber shall be equipped with devices capable of continuously monitoring operating parameters including, at a minimum, the scrubbing liquid temperature, scrubbing liquid flow rate, chemical addition flow rate, and pressure differential. Except for the scrubbing liquid and chemical addition flow rates, operating parameter readings shall be recorded at least once each day the scrubber is in operation. The scrubbing liquid flow rate shall be recorded continuously. When chemical is added to the scrubbing liquid, the flow rate of the chemical being added shall be recorded continuously.
- (iii) All monitored operating parameters of the scrubber shall be maintained at the levels recorded during the most recent performance test that demonstrated compliance with the permitted emissions limits. Alternative levels may be used provided the facility can justify, through testing or the use of a CEMS, that better emissions control is being achieved. Normal operating parameters or operating parameter ranges that demonstrate compliance with the permitted emissions limits, with appropriate averaging periods, shall be submitted with the source's operating permit application.
- (iv) Observations at least once each day during daylight hours of scrubber operation shall be conducted to determine whether there are leaks, noise, or other indications that corrective action is necessary. If corrective action is required, it shall occur immediately.

III.(B) Compliance Schedule

(1) Compliance Schedule for Chemical Addition Equipment

- (a) Unless the source has testing data demonstrating chemical addition is not necessary, as provided for in Condition III.(A).(3).(b), equipment for continuously recording the scrubbing liquid flow rate and chemical addition flow rate (if chemicals are added) shall be installed by July 10, 2008.